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⑥ MANUAL OF MINES AND BOOBY TRAPS OF THE FAR EAST (Manual des Mines et Pièges d'Extreme-Orient).

⑪ 174x

⑫ 131

⑬ SD-174 A / 1A Order-935

⑭ Copy available to DDC does not permit fully legible reproduction - Translated from the original French version.

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Item 10. Manual of Mines and Booby Traps of the Far East.

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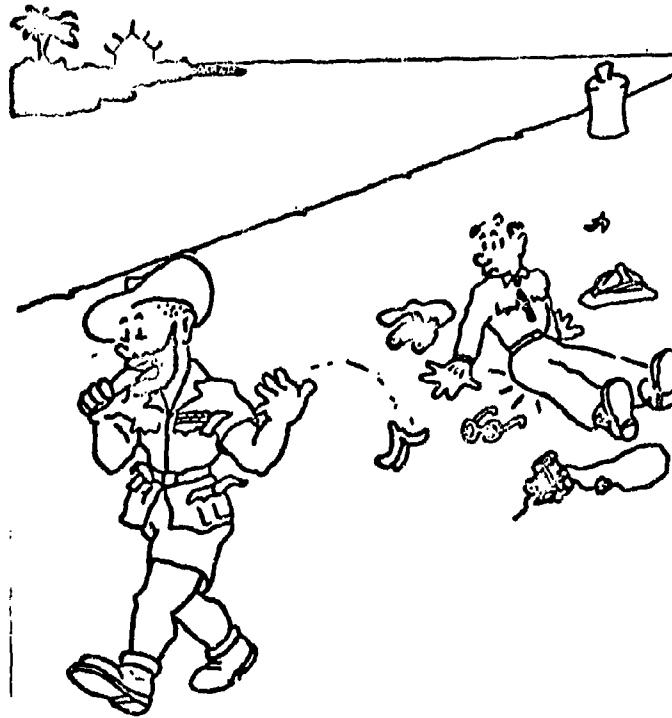
ROUGH DRAFT

MANUAL  
of  
MINES AND BOoby TRAPS IN THE FAR EAST

(Translated from the French,  
"Manuel des Mines et Pièges d'Extrême-Orient")

# MINE et PIÈGE

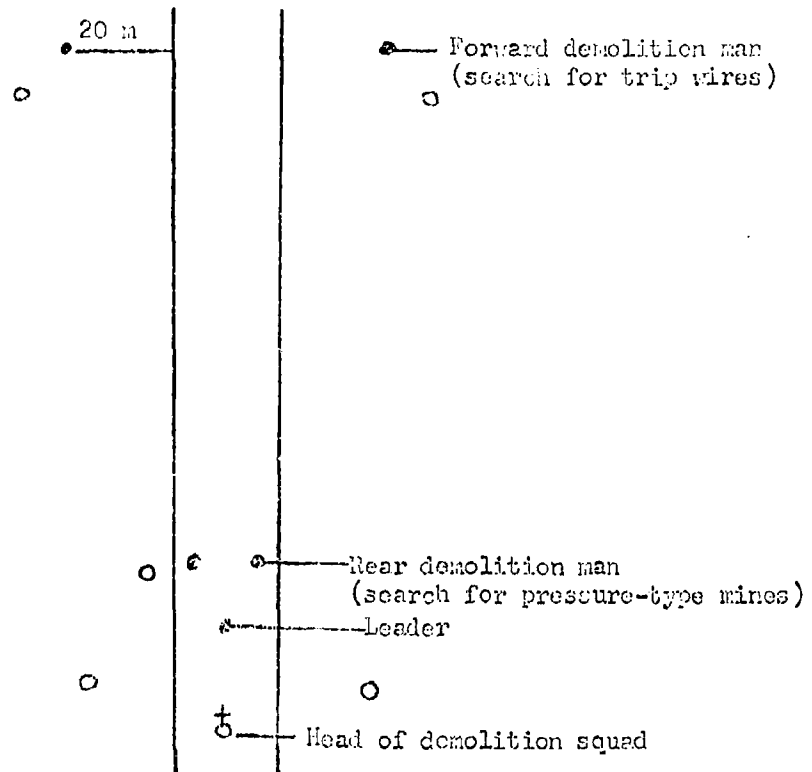
L'EXTRÊME-ORIENT





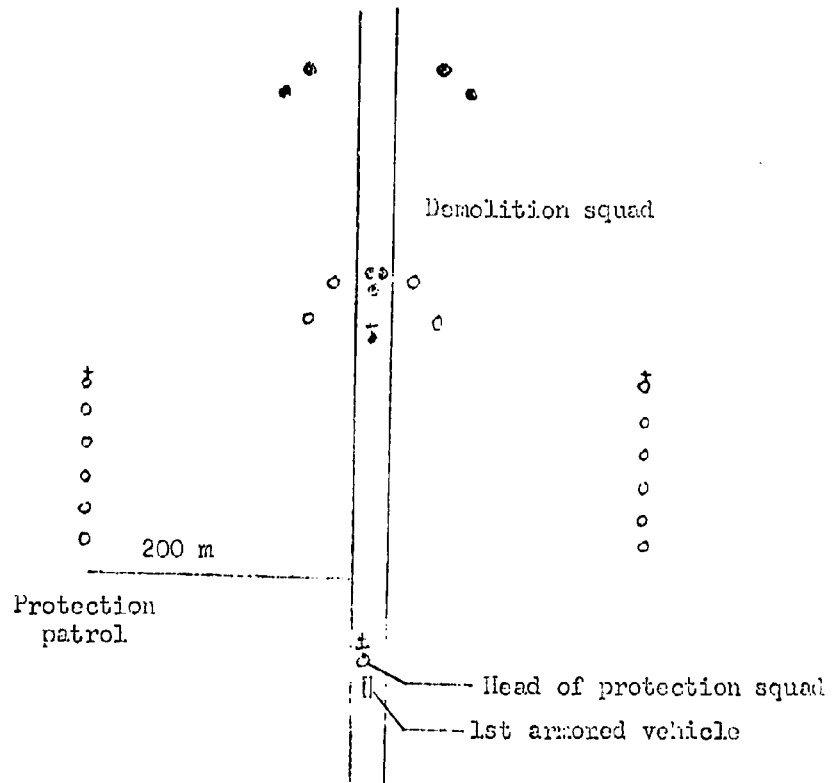
Surprise or be surprised!





Demolition Squad. Plan of Operation

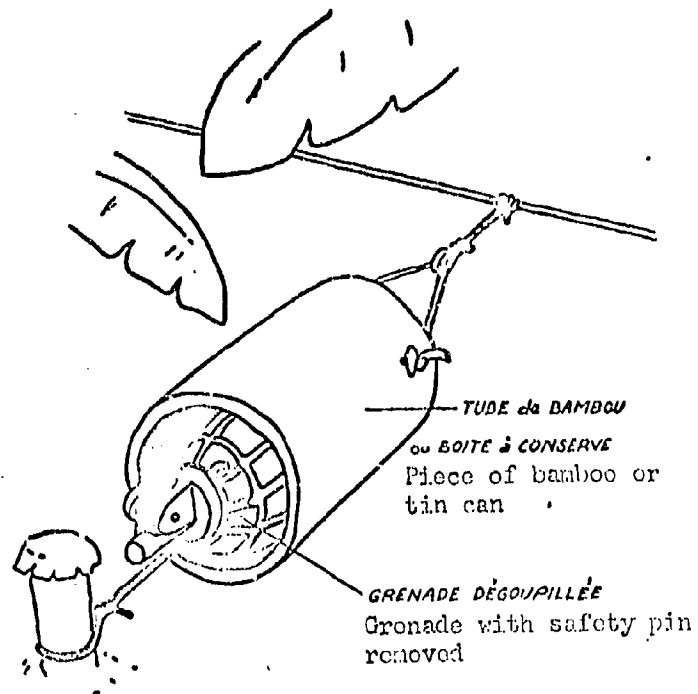
- Demolition crew
- Protection personnel



Protection Squad. Plan of Operation

- Demolition crew
- Protection personnel



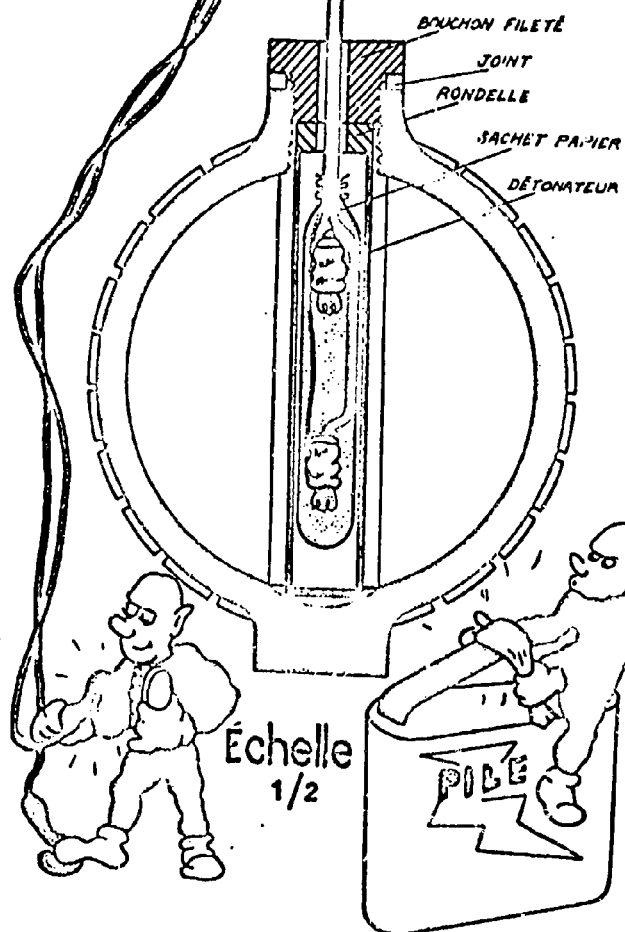


Beware! The piece of string may be a booby trap.



Beware! If you step on a tiger's tail you may have one chance in a hundred of surviving. If you step on a mine, you don't have one chance in a thousand.

# MINE SPHERIQUE V.M. à ALLUMEUR ELECTRIQUE



V. C. Sphere-Shaped Mine with Electric Fuze. Scale: 1:2

Bouchon fileté = threaded plug  
Joint = coupling  
Rondelle = washer

Sachet papier = paper bag  
Detonateur = detonator  
Pile = battery

V.C.\* SPHERE-SHAPED MINE WITH ELECTRIC FUZE

Type: Fragmentation

Appearance: Sphere is made of cast iron and has serrations for fragmentation effect.

Size: Outer diameter = 18 cm

Firing device: Improvised electric fuze. Double firing with two flashlight bulb caps.

Employment: Anti-personnel mine.

To set: Place the bag containing the improvised electric fuze into the chamber. Screw in the threaded plug.

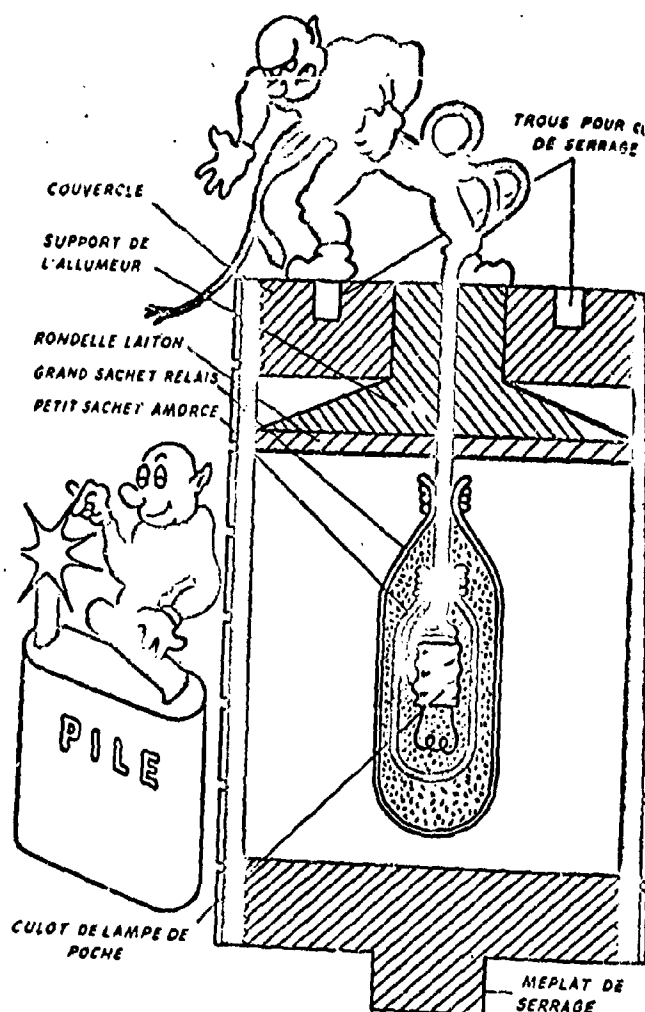
Functioning: Connecting the conductor wires to the terminals of an electric source of more than 3.5 volts causes the explosion.

Neutralizing: Cut the electric wires one at a time. Unscrew the cap. Remove the bag by rotating the mine. Do not exert any pull on the wires. If the bag does not come out, destroy the mine on the spot.

Source: Company of the Corps of Engineers 71/1, Region of Sadec, March, 1948.

---

\*Translator's note: V. M. in the original French, which stands for Viet Minh (North Vietnamese). Present-day meaning would be Viet Cong (V.C.).



Fragmentation Mine, 80 mm outer diameter

- Couvercle = cover
- Rondelle laiton = brass gasket
- Support de l'allumeur = fuze support
- Grand sachet relais = large relay container
- Petit sachet amorce = small fuze container
- Pile = battery
- Culot de lampe de poche = flashlight bulb cap
- meplat de serrage = hold-down plate
- trous pour clous (?) de serrage = holes for inserting set screws



### FRAGMENTATION MINE

Type: Electric anti-personnel mine. Remote operated by a firing man.

Appearance: Cast-iron cylinder with square cross sections. Two electric wires come out of the cap.

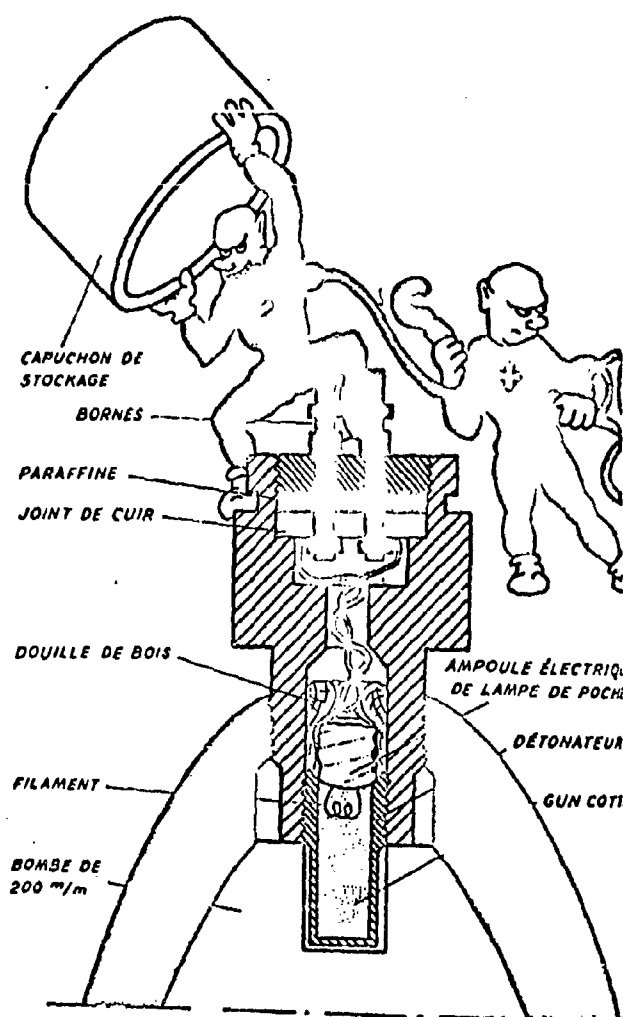
To set: The mine is delivered ready to operate. Connect the conductor wires to the wires of the mine.

Functioning: Connecting the conductor wires to the terminals of an electric battery greater than 3.5 volts causes the mine to ignite.

Neutralizing: Cut the electric wires one by one. Carry it away, if necessary, and destroy.

Caution: A strong pull on the electric wires can cause an accidental misfire.

Source: T.F.I.S., 1948.



# V. C. Electric Fuze

Capuchon de stockage = shipping cap  
 Bornes = terminals  
 Paraffine = paraffin  
 Joint de cuir = copper coupling  
 Douille de bois = wooden socket  
 Filament = filament  
 Bombe de 200 m/m = 200-mm bomb

Ampoule électrique de lampe  
 de poche = flashlight bulb  
 Détonateur = detonator

V. C. ELECTRIC FUZE

Type: Improvised electric fuze.

Appearance: Made of machined copper. There are two screw-type terminals on the top.

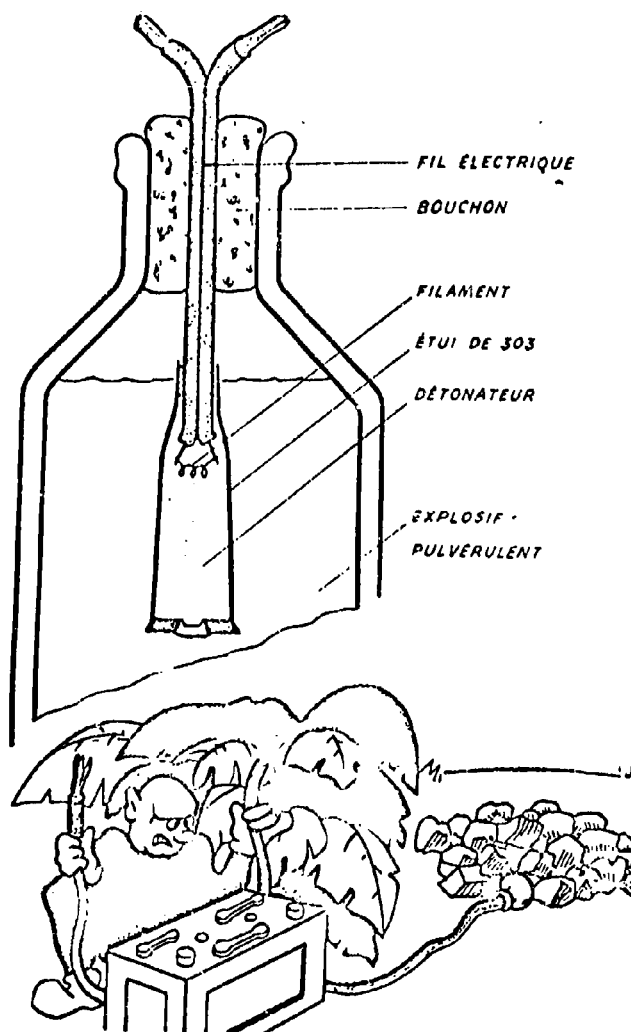
To set: Remove the shipping cap protecting the terminals. Insert into the chamber of a 200-mm bomb. Attach the lead wires to the terminals.

Functioning: Connecting the conductor wires to the terminals of an electric battery greater than 3.5 volts causes the fuze to ignite.

Neutralizing: Cut the wires one by one. Take out the fuze.

Employment: Anti-vehicular mine.

Source: T.F.I.S., September, 1948.



Bottle-type Mine

Fil electrique = electric wire  
Bouchon = plug  
Filament = filament  
Etui de 303 = 303 casing  
Detonateur = detonator  
Explosif pulverulent = powder explosive

IMPROVISED BOTTLE-TYPE MINE

Type: Improvised electric fuze.

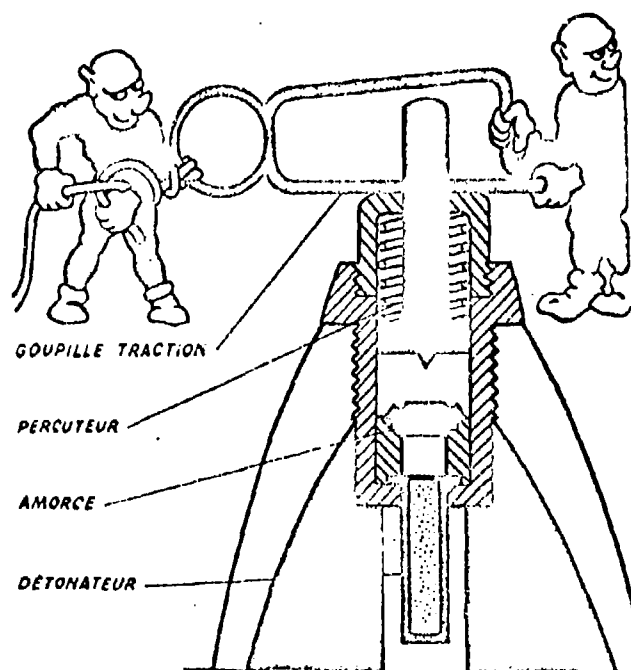
Appearance: Bottle or glass container.

Starting device: Improvised electric fuze.

Functioning: Connecting the lead wires to the terminals of an electric battery causes it to ignite.

Neutralizing: Cut the wires one by one. Destroy the mine on the spot, if possible. Otherwise, carry the entire mine away and destroy it. Do not pull on the wires.

Source: 3rd Infantry Regiment, Tonkin. March, 1948.



Pull-Type Fuze for 80-mm Shells. Scale: 1:1

Goupille traction = pull-out pin  
Percuteur = striker  
Amorce = primer  
Detonateur = detonator

# PULL-TYPE FUZE

Type: Trigger pin

Appearance: Made of machined copper. The trigger pin draws back a safety pin.

To set: Insert into the chamber of an 88-mm shell. Attach the pull chord. Unfasten the safety part of the pin and twist it towards the ring.

Functioning:

In the armed position:

The striker spring is compressed. The trigger pin passing through the end of the striker holds it down.

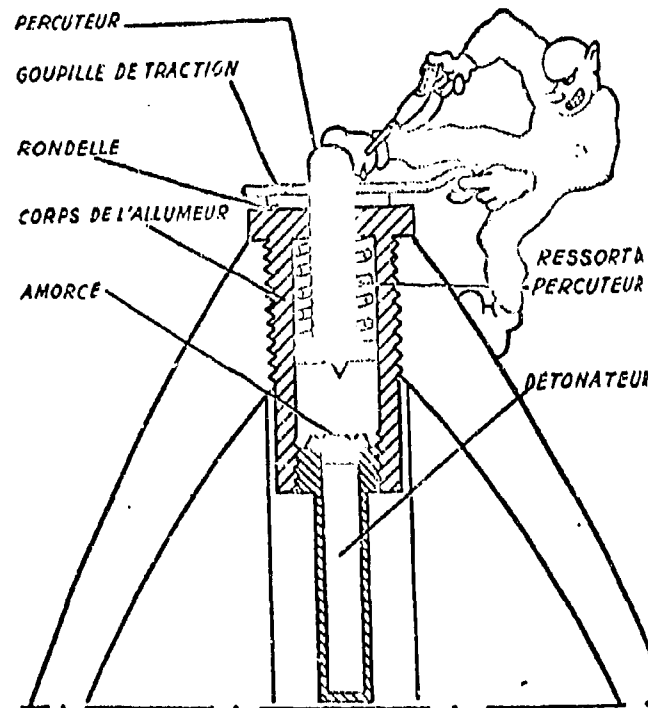
In the firing position:

A pull on the wire releases the pin. The striker is freed and hits the primer.

Neutralizing: Cut the pull chord. Untwist the safety part of the pin and reset the fastener. Remove the fuze.

Caution: If the pin does not pass entirely through the end of the striker, do not attempt to replace it.

Source: T.F.I.S., 1943.



Pull-Type Fuze for 240-mm Shells. Scale: 1:1

Percuteur = striker  
 Goupille de traction = pull pin  
 Rondelle = coupling  
 Corps de l'allumeur = fuze body  
 amorce = primer

Ressort du percuteur = striker  
 spring  
 Detonateur = detonator



PULL-TYPE FUZE

Type: Trigger pin

Appearance: Made of machined copper. The pin is inserted through the end of the visible end of the striker.

To set: Place the fuze inside the chamber of a 240-mm shell. Attach the pull chord to the ring on the end of the pin.

Functioning:

In the armed position:

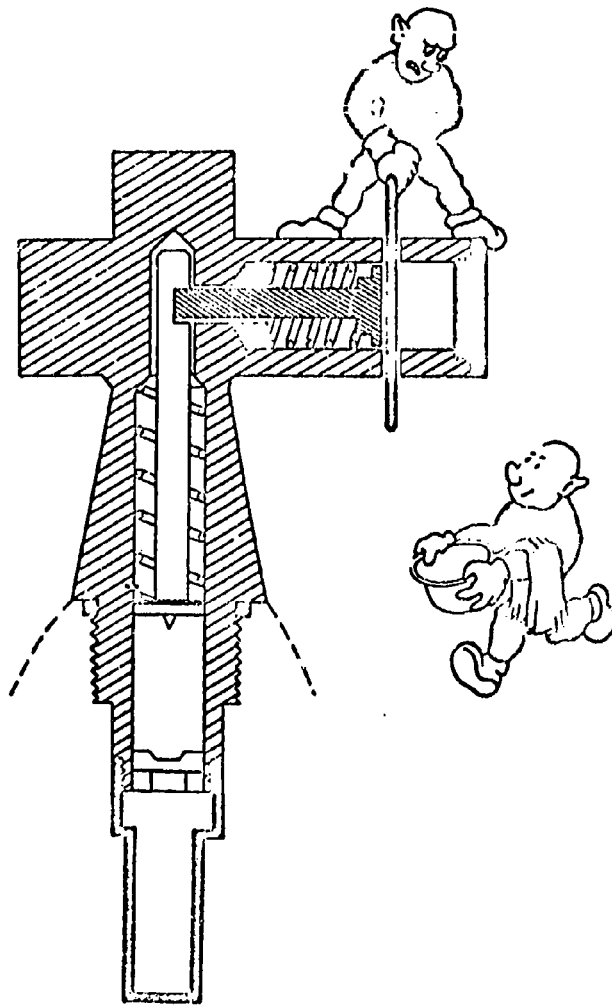
The striker spring is compressed. The trigger pin inserted through the end of the striker holds it down.

In the firing position:

A pull on the chord releases the pin. The striker is freed and hits the primer.

Neutralizing: Cut the pull chord. Bend back the end of the pin.

Caution: If the pin does not entirely pass through the end of the striker, there is danger of being killed if you try to reinsert it.



"Faucet-Type" Fuze

"FAUCET-TYPE" FUZE

Description: Resembles a brass faucet. It has a threaded screw which enables it to be used on the ogive of a shell.

Functioning: In the armed position:

The striker is pulled back; the spring is compressed by a piston perpendicular to its axis. The end of the spring fits into a notch in the weapon. This piston is held in this position, with the spring compressed, by the trigger pin.

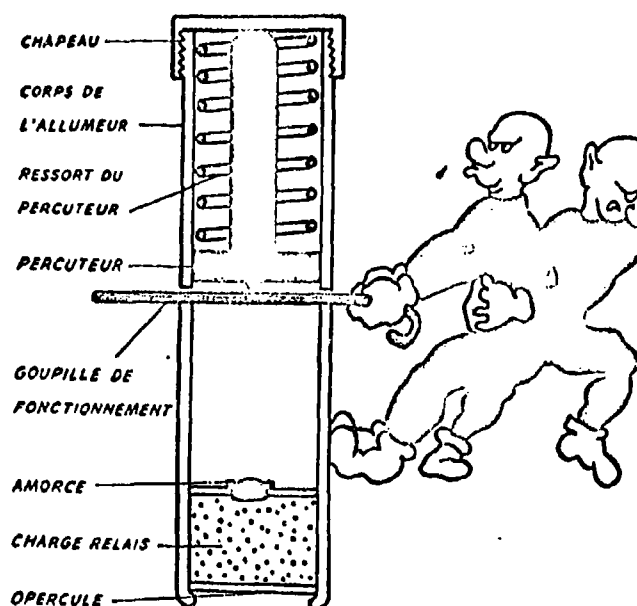
In the firing position:

A pull on the starter pin releases the piston, which moves by the action of the spring, thus disengaging itself from the notch in the weapon. The striker is freed and by the action of the spring strikes the igniter cap.

Neutralizing: Cut the pull wire. Take out the fuze.

Note: If the pin does not pass clearly through the body of the fuze, do not attempt to reinsert it. Destroy the fuze in place.

Source: Company of the Corps of Engineers 61/3. Tonkin. 1948.



V. C. Improvised Fuze. Scale: 1:1

Chapeau = cap  
 Corps de l'allumeur = fuze body  
 Ressort du percuteur = striker spring  
 Percuteur = striker

Goupille de fonctionnement = trigger pin  
 Amorce = primer  
 Charge relais = relay charge  
 Opercule = lid

### V.C. IMPROVISED IGNITER

Type: Starter pin

Appearance: The body of the detonator is made up of a piece of iron pipe (water-main type) with a 30-mm outer diameter.

Functioning:

In the armed position:

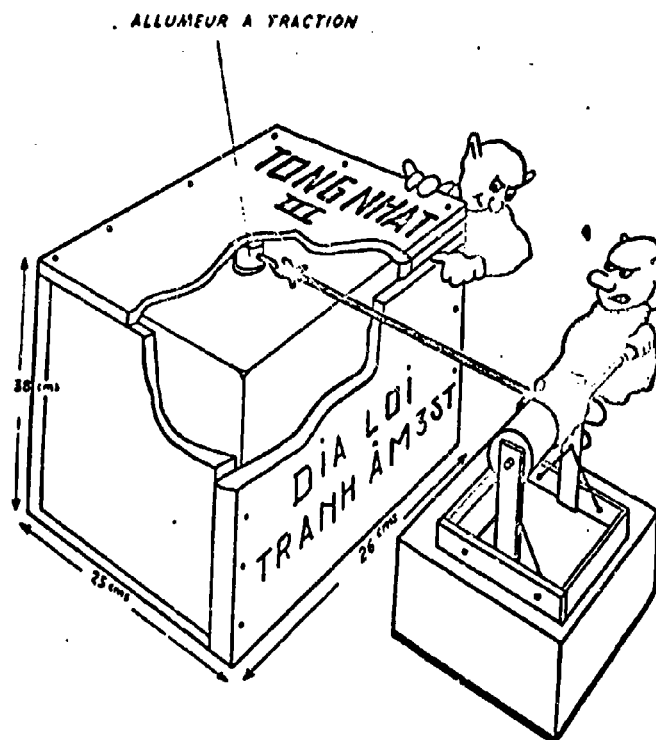
The striker spring is compressed between the head of the striker and the igniter cap, the end of the striker acting like a slide-rod. The striker is held in place by the starter pin.

In the firing position:

A pull on the pin frees the striker which, thrust down by the spring, hits the primer.

To set: The explosive part of the fuze is slid into the chamber of the shell or bomb that is being used as a mine.

Neutralizing: Not safe. Slowly remove the detonator after cutting the pull wire. Stay at a distance and pull on the pull wire. Beware of flying fragments.



Boxed Mine.

Allumeur a traction = pull-type fuze

#### BOXED MINE

Appearance: In a wooden box with a slit on one side to allow passage of the pull chord. A metal mine is on the inside.

Dimensions: 38 x 25 x 26 cm

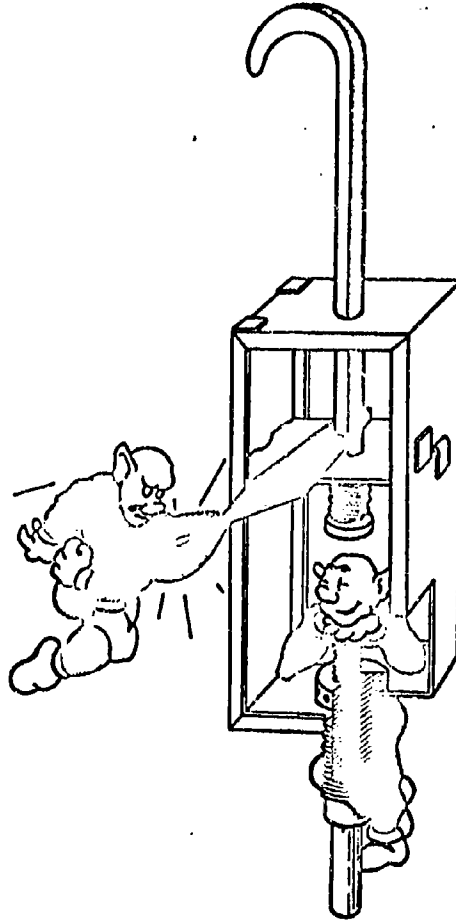
Inscriptions: On the box: THONG NHAT III (Translation: Union of 3 Workshop); DIA LOI = TRANH AM 3' ST = (Translation: Insulated mine).

Application: It is used with a pull chord placed in a booby trap or it can be used by remote control with a firing device. It might be used under water.

Functioning: An insulated fuze is set off by a pull on the safety pin.

Neutralizing: Cut the booby-trap wire. If necessary, carry the mine away inside its case and destroy. Never attempt to remove the wooden case to "take a peek". Some mines of this type are booby trapped with a grenade that has its safety pin removed.

Source: Service des Munitions (Munitions Service), March, 1948.



Pull-Release-Type Fuze. Scale: 1:2



# PULL-RELEASE-TYPE FUZE

Type: Pull with a hold-down trigger;  
Release: sudden release of a hammer

Appearance: Parallelepiped. Made of thin sheet metal. One end of the hammer is hook shaped and is visible.

## Functioning:

### (1) Pull-type

In the armed position:

The hammer is **retained** by the trigger, which is locked inside the catch of the weapon.

In the firing position:

A pull on the end of the trigger releases the hammer, which springs up and strikes the heel of the firing pin and breaks its protection spring.

### (2) Release-type

In the armed position:

The mine is suspended from a wire **attached to the hook** on the end of the hammer. The weight of the mine is generally sufficient to compress the hammer spring.

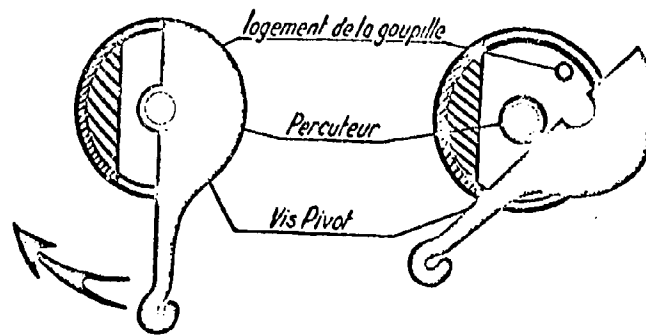
In the firing position:

When a vehicle hits the mine, the suspension wire breaks and the hammer strikes the heel of the firing pin.

Note: In this release-type, the trigger is not used.

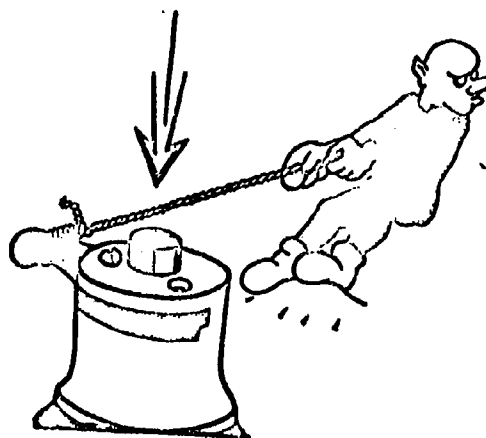
Neutralizing: Immobilize the hammer. Remove the firing pin. Remove the mine. It is always preferable to destroy this very sensitive device by pulling the control wires from a distance.

Source: Cochin-China, 1948. Instruction Center of the Corps of Engineers.



POSITION "ARMÉE"

POSITION "FEU"



# Pivot-Plate Fuze

Logement de la goupille = safety-pin housing  
 Percuteur = striker  
 Vis pivot = pivot screw  
 Position "arme" = armed position  
 Position "feu" = firing position

# PIVOT-PLATE FUZE

Type: Pull-type

Appearance: Copper hood. There is a slit on the top which is perpendicular to the axis of the striker. Inside this slit there is an anchor plate. The end of the striker passes through the upper part of the hood and is visible.

To set: Place the fuze inside a 75-mm shell. Attach the pull chord. Remove the safety pin.

Functioning:

In the armed position:

The striker spring is compressed. The striker is held back by the edges of the slot in the pivot plate which are inside the retainer groove.

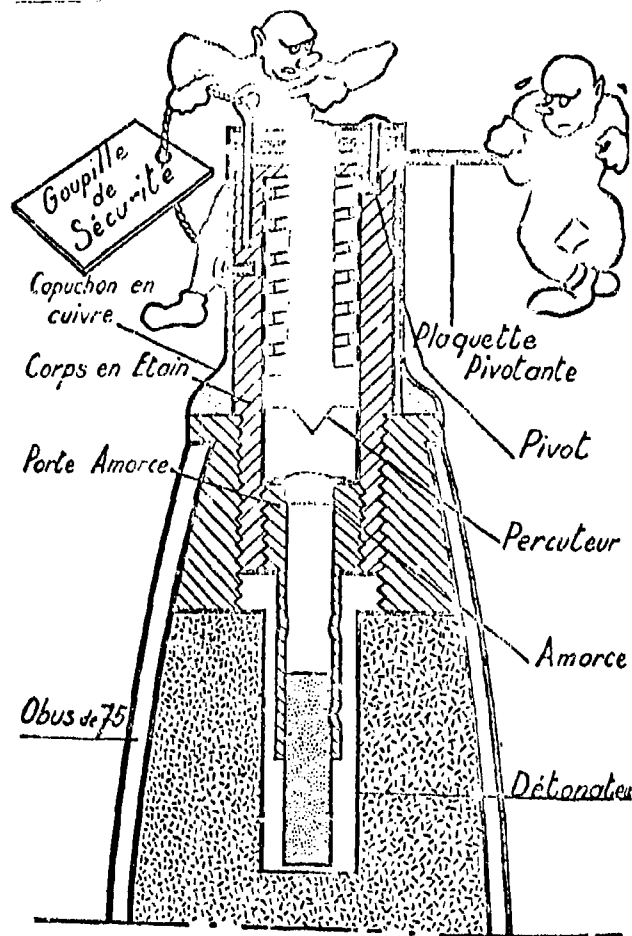
In the firing position:

A pull on the lever on the pivot plate causes it to rotate around the pivot screw. The striker is released and hits the primer.

Neutralizing: Cut the pull chord. Insert a safety pin, holding the plate firm inside the slit at the top of the hood. Remove the fuze. Be careful as it is a very sensitive device.

Use: Anti-vehicular or anti-personnel.

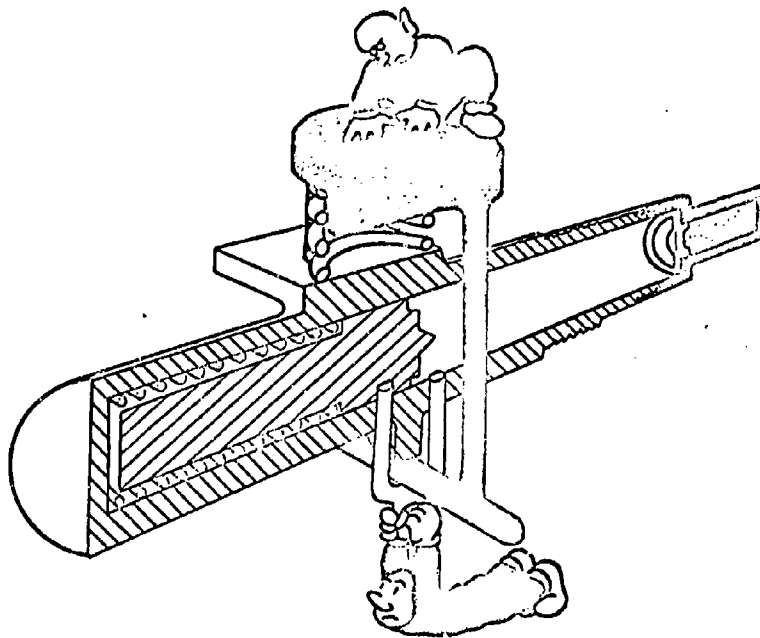
Source: T.F.I.S., 1948.



# Pivot-Plate Fuze

Goupille de securito = safety pin  
 Capuchon en cuivre = copper hood  
 Porte amorce = cap chamber  
 Obus de 75 = 75-mm shell

Plaque pivotante = pivot plate  
 Pivot = pivot  
 Percuteur = striker  
 Amorce = primer  
 Detonateur = detonator



Stirrup-Type Fuze

### STIRRUP-TYPE FUZE

Description: The body of the fuze is cylindrical and consists of a rectangular plate welded perpendicular to its axis at half-length. This plate has two holes for the straps of the stirrup. A protection spring is compressed between the rectangular plate and the upper flat part of the stirrup.

Functioning:

In the armed position:

The striker is held back. The spring is compressed by a U-shaped trigger pin, one side of which is slightly longer than the other. The base of the stirrup is in the curved part of the U.

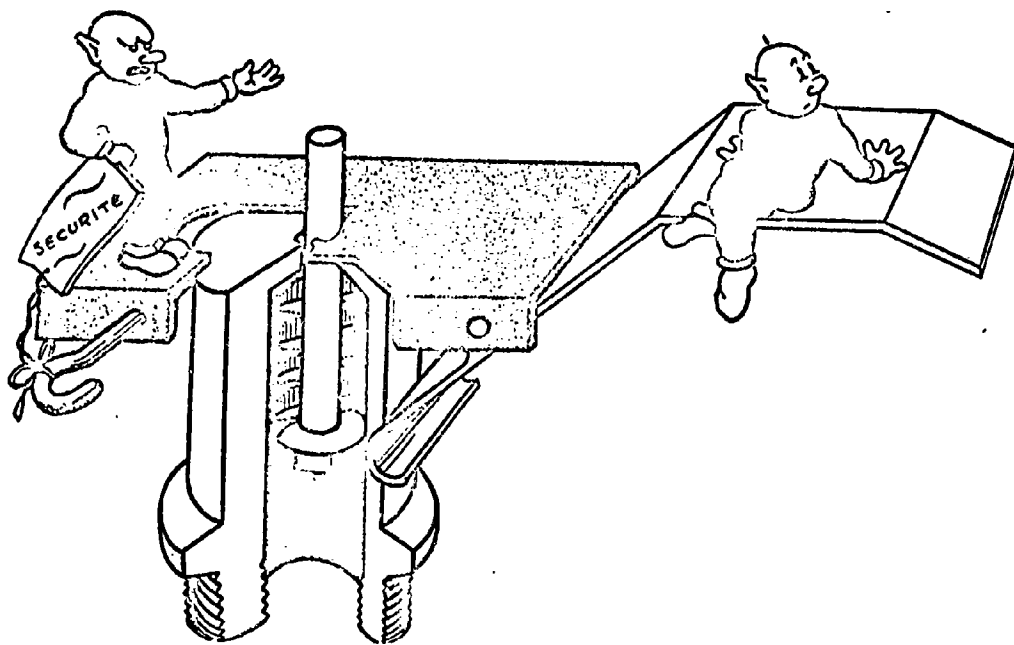
In the firing position:

(a) Normal functioning: A pressure on the plate on the stirrup compresses the protection spring. This pressure is transmitted to the starter pin which then comes out. The striker is freed and hits the primer.

(b) Anti-demolition: The U-shaped pin contains a ring to which a pull chord can be attached. Picking up the mine-fuze causes the pin to come loose and the device to explode.

Neutralizing: There is no safe way, so it is preferable to destroy the device. In case of absolute necessity, immobilize the pin and stirrup and remove the detonator.

Source: Tonkin, 1947.



Pressure-Plate Fuze

PRESSURE-PLATE FUZE

Description: The fuze body is cylindrical in shape (4.5 cm long, 3 cm outer diameter) and made of aluminum alloy. Threading on it makes it adaptable for use on a Japanese A.T. mine.

Functioning:

In the armed position:

The striker is retained. The spring is compressed by a plate housed in a notch-hole in the weapon.

In the firing position:

outside

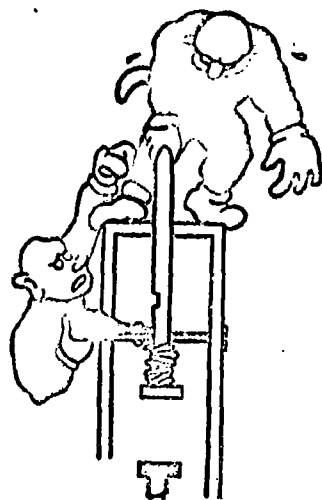
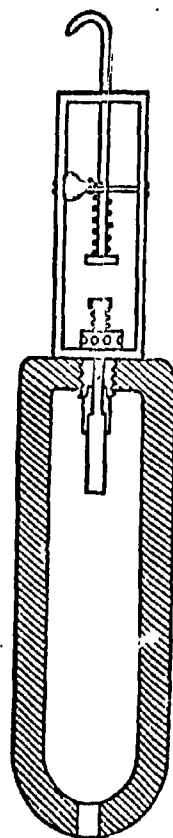
Pressure on the plate acts as a lever and causes the little plate to move and free the striker, which hits the primer.

Neutralizing: Reinsert the safety pin.

Note: If the little plate does not appear to be clearly locked inside the notch-hole of the weapon, destroy on the spot.

Source: City of Hanoi, July, 1948.





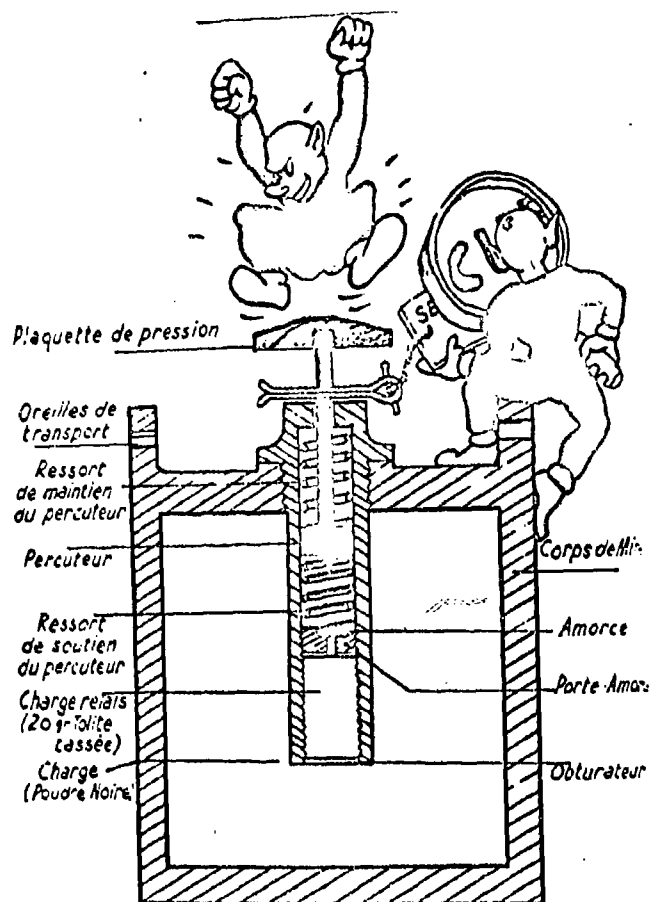
Pour armer

Mine With Pull-Release-Type Fuze. Scale: 1:2

Pour armer = to arm



Release-Type Booby Trap



Anti-Vehicular Mine, C.B.X.Q.H. Scale: 1:2

Plaque de pression = pressure plate  
 Oreilles de transport = lugs for carrying  
 Ressort de maintien du percuteur = support spring for striker  
 Charge relais (20 gr tolite tassée) = relay charge (20 gr of compressed tolite)  
 Charge (poudre noire) = charge (black powder)

Corps de mine = mine body  
 Amorce = primer  
 Porte-amorce = cup chamber  
 obturbateur = obturator

ANTI-VEHICULAR MINE C.B.X. J.H.

Appearance: Cast-iron cylinder. The lugs on top that are used for carrying it are characteristic.

Total weight: 15.55 kg

Explosive charge: 2.5 kg of mixture of black powder and red phosphorus

To set: Holding the striker, remove the safety pin. Lower the striker slowly into the body of the fuze. Bury the mine in a vertical position with the fuze on top.

Caution: Do not push down on the striker accidentally.

Functioning:

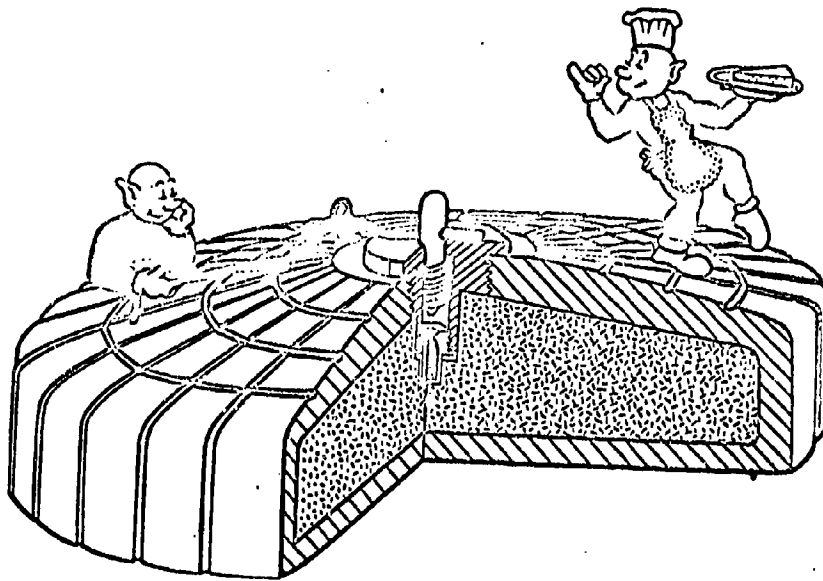
In the armed position:

Once the safety pin is removed, the striker is in equilibrium between the two opposing protection springs.

In the firing position:

A pressure exerted on the small plate covering the end of the striker presses it in. The interior protection spring is compressed and the tip of the striker breaks the primer with the fulminate.

Neutralizing: If necessary, keep the mine in the hole and slowly pull on the end of the striker so that the little opening in the safety pin is visible. Insert the safety pin. Pull the mine out, but from a distance and under shelter.



"Moka" Mine. Scale: 1:2

"MOKA" MINE

Type: Fragmentation anti-vehicular and anti-personnel

Appearance: Circular in shape (German anti-tank species).  
Thick cast-iron body with serrations. Gray-green color.  
Rudimentary device is of brass. Inserted in the central chamber of the mine.

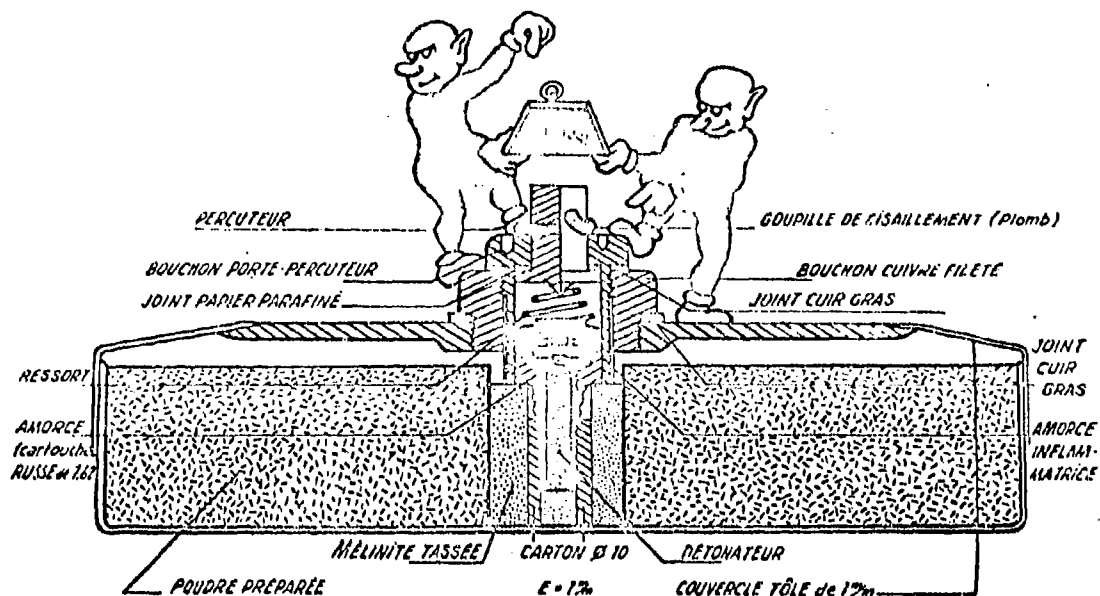
Functioning: The fuze operates by a pull on a chord which is wrapped around the retainer pin of the striker.  
This chord is placed along a small groove in the terrain.

Application: Anti-vehicular: Bury at a short depth in the probable path of the vehicles to be destroyed.

Anti-personnel: Bury at a short depth at the edge of a slope.

Neutralizing: Cut the pull chord. Pull on it from a distance (beware of a possible grenade buried as a booby trap underneath the mine). If the pull pin does not clearly pass through the end of the striker, destroy the mine in place. If the mine explodes above the ground level, the fragments can be dangerous within a radius of 200 meters.

Source: Annam, 1948. Instruction Center of the Corps of Engineers.



Mine With Lead Pin. Scale: 1:1

Percuteur = striker  
 Bouchon porte-percuteur = striker sleeve plug  
 Joint papier parafine = wax-paper coupling  
 Ressort = spring  
 Amorce (cartouche Russe de 7.62) = primer (7.62-mm Russian cartridge)  
 Poudre preparee = prepared powder  
 Melinite tassee = compressed melinite  
 Carton Ø 10 = 10 Ø cardboard

Goupille de cisaillement (plomb) = shear pin (lead)  
 Bouchon cuivre filete = threaded copper plug  
 Joint cuir gras = raw leather coupling  
 Amorce inflammatrice = percussion cap  
 Detonateur = detonator  
 Couvercle toile de 1 mm = 1-mm-thick cover made of sheet metal

MINE WITH LEAD PIN

Appearance: "Saucer" mine. Center fuze. A shear pin is visible passing through the upper part of the fuze.

Functioning:

In the armed position:

The striker is hit by a lead shear pin and by a protection spring compressed between the head of the striker and the cap chamber.

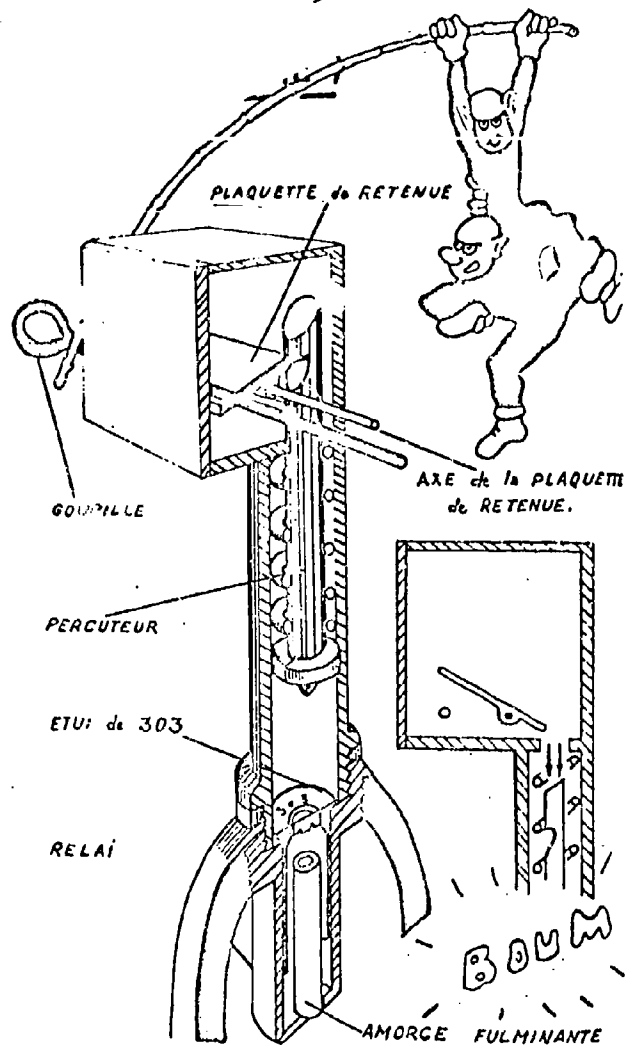
In the firing position:

A downward vertical pressure on the tip of the striker shears the lead pin. The conical protection spring is compressed and the percussion cap is broken, setting off the explosion.

Neutralizing: Take out the fuze slowly. In case of misfire, destroy the mine in place.

Origin: 1948 information.





Square Fuze ("Armed" Position)

Goupille = pin  
 Percuteur = striker  
 Etui de 303 = 303-mm casing  
 relai = relay

Plaque de retenue = <sup>retains</sup> hold-down plate  
 Axe de la plaque de retenue = hold-down plate spindle  
 Amorce fulminante = fulminating primer

### SQUARE FUZE

Type: Small plate acting as a retainer trigger

Appearance: Square box with a safety pin passing through it.  
The box is welded onto a tube that makes up the body of the fuze.

To set: Place the fuze into the chamber of the shell or bomb to be used as the mine. Attach the pull chord to the safety pin.

Functioning:

In the armed position:

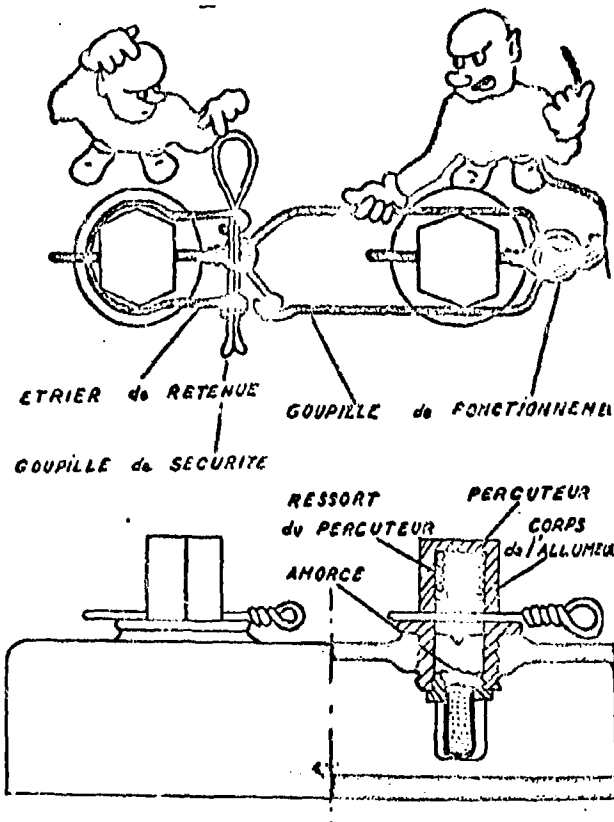
The safety pin immobilizes the plate that acts as the trigger. The tip of the striker has a notch hole in it. The plate fits into this notch hole. The striker spring is compressed.

In the firing position:

A tug on the chord pulls out the safety pin. The plate pivots on the spindle and releases the striker, which hits the primer.

Neutralizing: Cut the pull chord. If the safety pin clearly passes through the box, lift out the fuze. Otherwise, destroy the device on the spot.

Source: V. C. document, 1948.



V. C. Flat Mine With Two Pull-Type Fuzes. Scale: 1:2

Etrier de retenue = binding clamp  
 Goupille de securite = safety pin  
 Goupille de fonctionnement = trigger pin  
 Ressort du percuteur = striker spring  
 Percuteur = striker  
 Amorce = primer  
 Corps de l'allumeur = fuze body

# FLAT MINE WITH TWO FUZES

Type: Anti-vehicular

Appearance: Circular in shape. Made of 4-mm thick, welded, stamped iron. Two threaded round orifices on the top are used for filling. The fuzes are placed into these orifices.

Explosive charge. Approximately 2.5 kg of black powder.

Firing device: Two identical fuzes with a common pull system on the trigger pins.

Current employment: Road holes

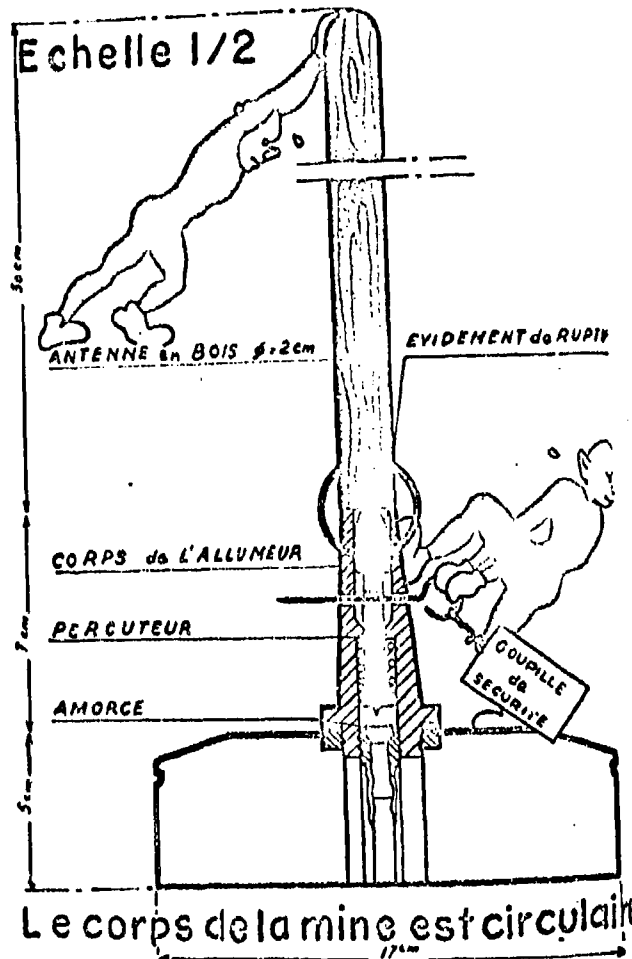
To set: Place the mine in the hole. Attach the pull wire to the pull ring. Remove the safety pin. Camouflage.

Functioning: A tug on the wire simultaneously pulls out the two trigger pins. The strikers are released and strike the primer.

Temporary neutralizing: Cut the pull chord. If the safety clamp is still on, insert the safety pin. If not, bind with a thin piece of metal wire so as to immobilize the two trigger pins.

Permanent neutralizing: Gently clip in two the part connecting the two trigger pins. Remove the fuzes.

Source: Corps of Engineers T.F.I.M. A despatch boat called "La Gazelle" (tied to a junk in the vicinity of Tonkin).



Bamboo Mine. Scale: 1:2

Antenne en bois = wooden stick

Corps de l'allumeur = fuse body

Percuteur = striker

Amorce = primer

Evidement de rupture = hollow groove

Le corps de la mine est circulaire = The body of the mine is round

#### BAMBOO MINE

Type: This mine contains a stick that is ejected and pierces an object.

Appearance: The body of the mine is round and flat. The stick is made of a wooden stem 2 cm in diameter and 50 cm long. It does not appear that the small diameter of the mine (17 cm) and its lightness would give it sufficient stability. Some sort of a weight must be used to steady the base.

To set: Camouflage the stick in some underbrush. Steady the base. Remove the safety pin.

Functioning: In the armed position.

The striker spring is compressed by the striker. The end of the striker is placed inside the base of the stick. The shoulder of the hollow groove sticks into the upper part of the fuze body and opposes the action of the striker spring.

In the firing position:

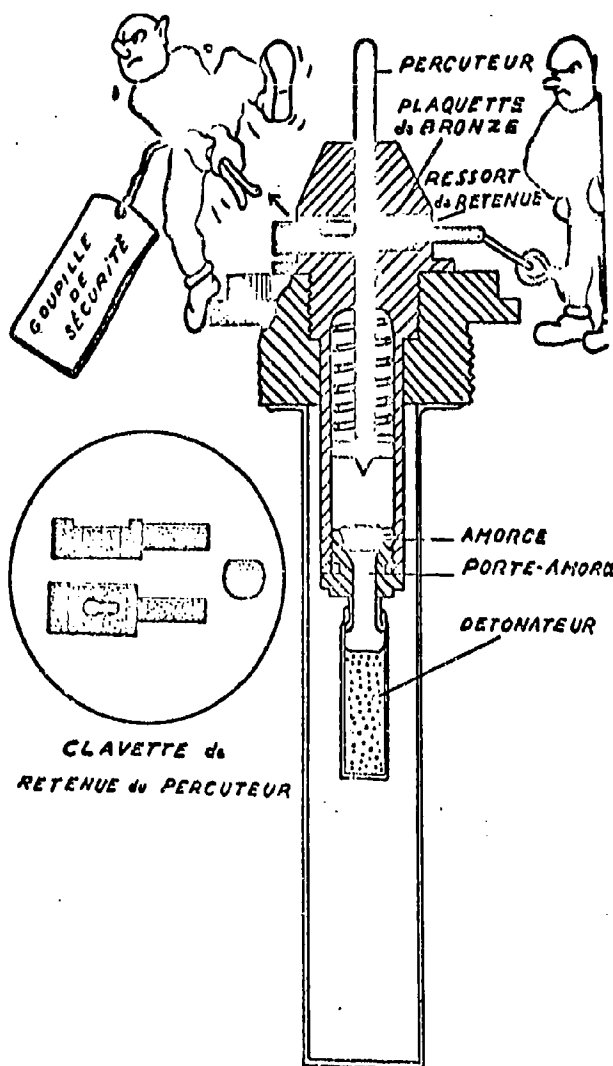
Any movement that tends to bend the stick in any direction causes it to break at the level of the hollow groove. The striker is freed and hits the primer.

Neutralizing: Reinsert the safety pin. Remove the fuze.

Caution: The stick may have deteriorated as a result of termites or atmospheric conditions. It is always very fragile.

Current usage: The mine is placed in an underbrush or in a bamboo grove. The stick is often covered with a piece of bamboo.

Source: T.F.L.S., 1948.



V. C. Pull-Type Fuze. Scale: 1:1

- Percuteur = striker
- Plaquette de bronze = bronze plate
- Ressort de retenue = retainer spring
- Amorce = primer
- Porte-amorce = cap chamber
- Detonateur = detonator
- Goepille de securite = safety pin
- Clavette de retenue du percuteur = keybolt for the striker

V. C. PULL-TYPE FUZE

Type: With keybolt

Functioning:

In the armed position:

- (1) The striker spring is compressed.
- (2) The striker is held by the keybolt, the notched part of which fits into the narrow end of the keyhole. This is held in position by a retainer spring (opposing forces of pull exerted on the key in the "firing" direction).

In the firing position:

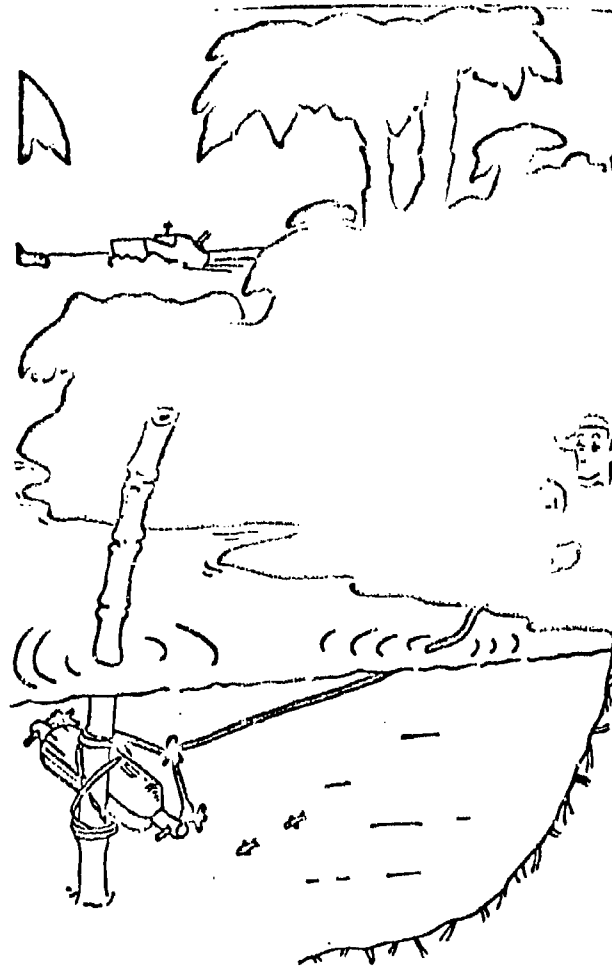
A pull on the bow of the key compresses the spring. The key moves and the circular part of the keyhole reaches the striker, which thus loses its support and, acted upon by the spring, strikes the primer.

To set: Insert the cap chamber. Insert the fuze into the mine. Attach the pull chord (unwound) to the pull ring. Remove the safety pin (pull from a distance).

Neutralizing: Reinsert the safety pin. Cut the pull chord. Take out the fuze.

Source: Instruction Center of the Corps of Engineers of the Far East, Cochin-China, August, 1948.





Underwater Mine With Two Pull-Type fuzes

MINE - BOMB WITH TWO PULL-TYPE FUZES

Type: Smooth-bore bomb

Appearance: Cast iron. Cylinder shaped with two frustums of cone on each side, the small base parts of which each have a hole in which to insert a fuze.

Dimensions: Outer diameter = 130 mm  
Length - 372 mm

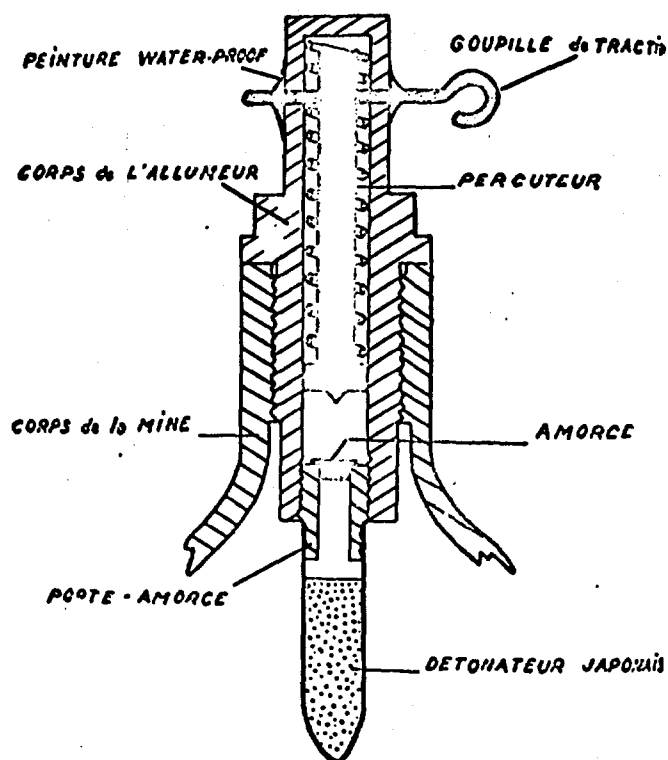
Explosive charge: Approximately 2 kg of explosive similar to black powder

Firing device: Pull-type fuzes described on the following pages.

Neutralizing: Remove the fuzes after disassembly.

Source: Instruction Center of the Corps of Engineers of the Far East, August, 1948.

Note: Some of these mines have been used with only one fuze or with an electric igniter.



Insulated Fuze for Underwater Mine With Double Igniter. Scale: 1:1

Peinture water-proof = waterproof paint  
 Corps de l'allumeur = fuze body  
 Corps de la mine = mine body  
 Porte-amorce = cap chamber  
 Goupille de traction = pull pin  
 Percuteur = striker  
 Amorce = primer  
 Detonateur japonais = Japanese detonator

CAUTION

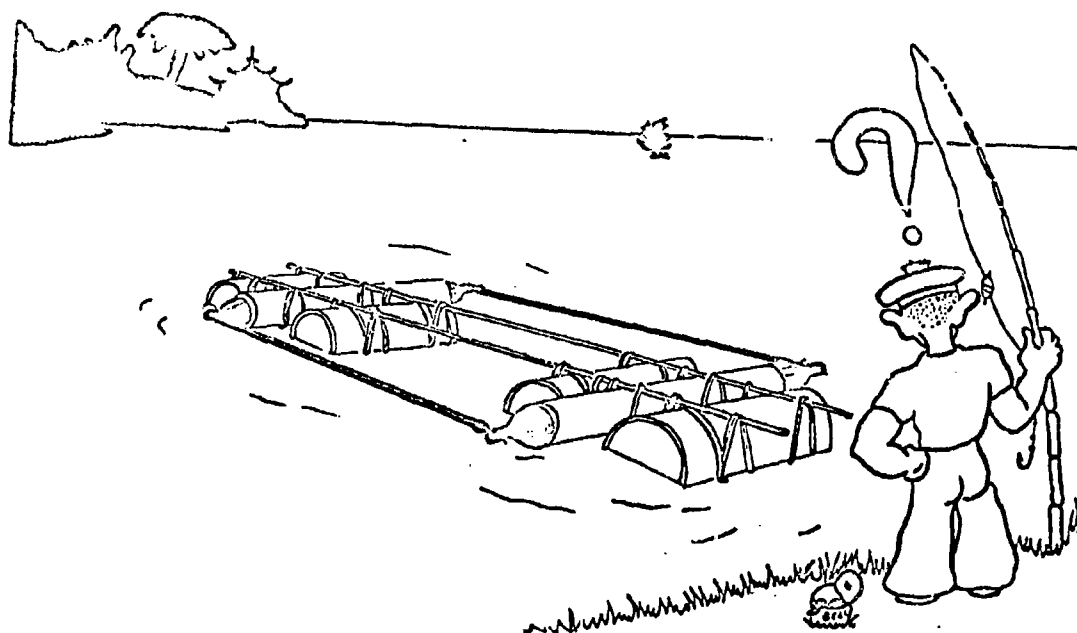
Do not play with fire.

A mine knows neither friend nor foe.

It waits for the first mistake; each move is final.

You can never be careful enough.

Remember, you can make a mistake only once, and from this mistake you probably won't recover.

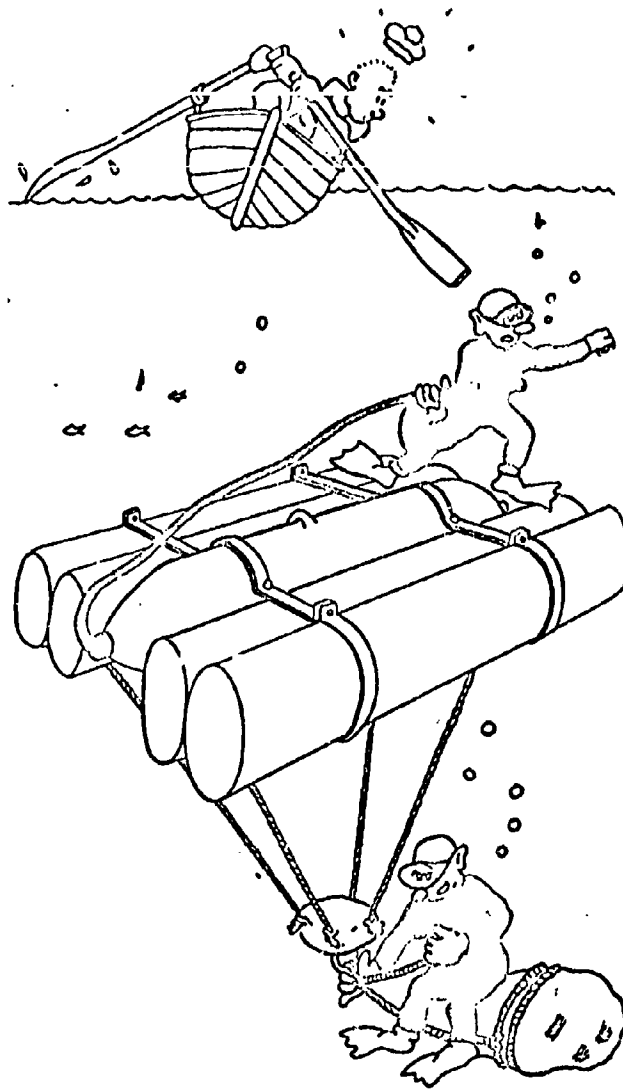


Drifting Mine With Four 280-mm Shells

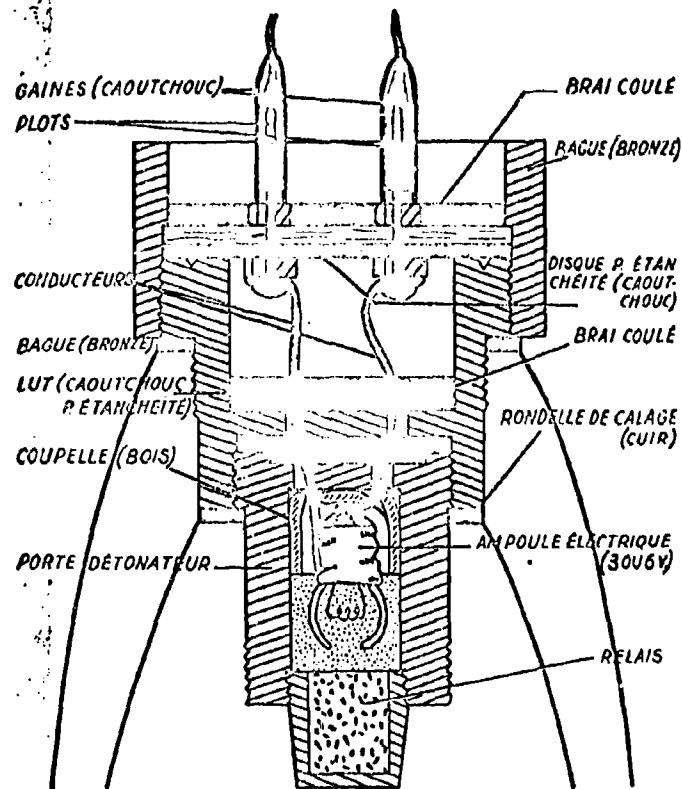
CAUTION

Act fast, but

- Do not confuse speed with overhastiness.
- Remember that most mines contain enough explosive to blow off your hand and possibly even to kill you.



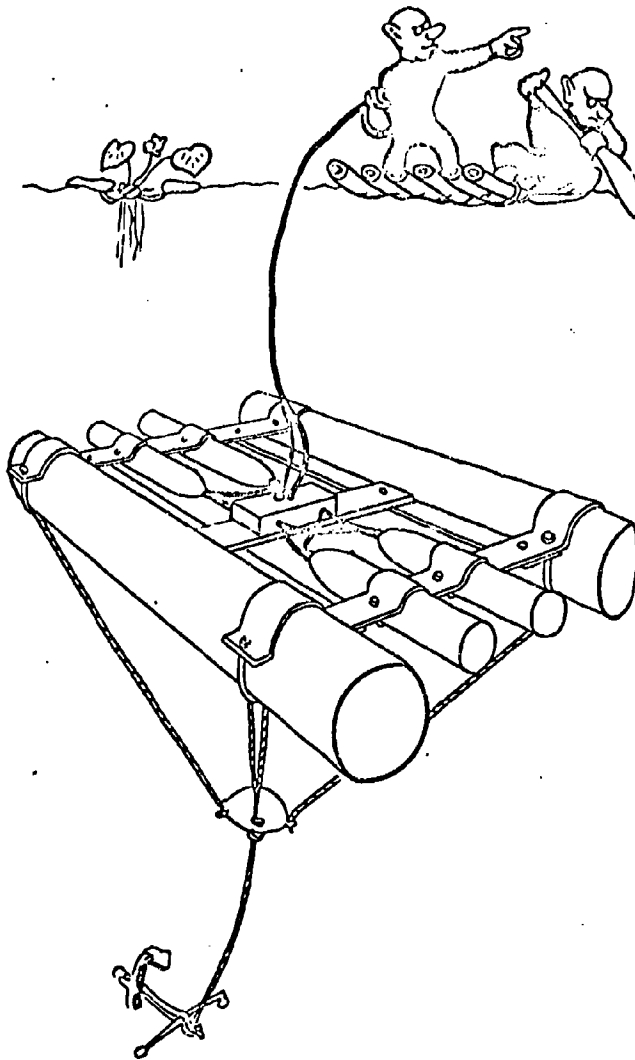
Anchored Underwater Mine

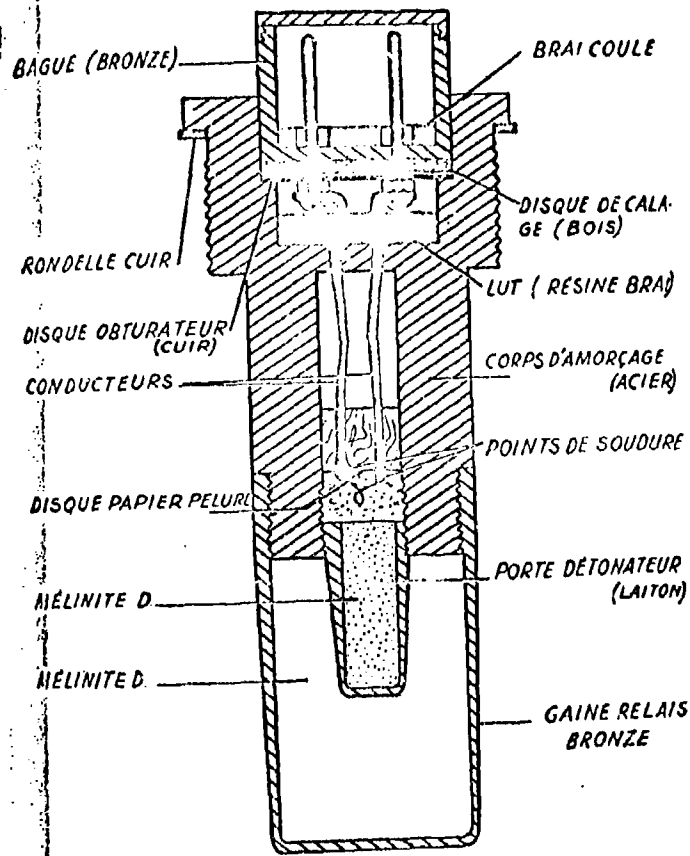


Insulated Electric Fuze for Anchored Underwater Mine

Gains (caoutchouc) = Rubber sheaths  
 Plots = contact studs  
 Conducteurs = conductors  
 Bague (bronze) = Bronze ring  
 Lut (caoutchouc p. etancheite) = Rubber-insulated lute  
 Coupelle (bois) = wooden cup  
 Porte detonateur = detonator casing  
 Brai coule = tar  
 Disque p. etancheite (caoutchouc) = rubber-insulated disk  
 Rondelle de calage (cuir) = leather washer  
 Ampoule electrique (3 ou 6 v) = electric bulb (3 or 6 volts)  
 Relais = relay



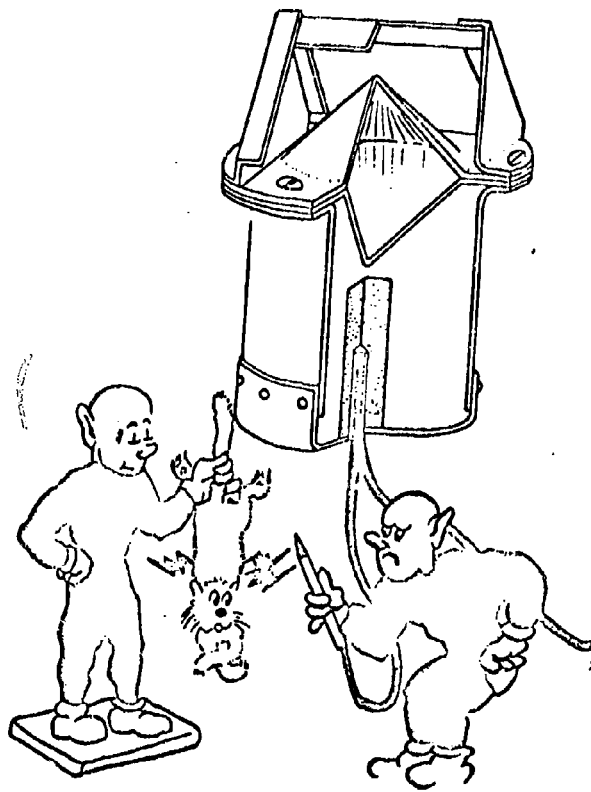




Insulated Electric Fuze for Underwater Mine

Bague (bronze) = bronze ring  
 Rondelle cuir = leather washer  
 Disque obturateur (cuir) = obturator  
 disk (leather)  
 Conducteurs = conductors  
 Disque papier pelure = tissue paper disk  
 Points de soudure = soldered points  
 Porte detonateur (laiton) = detonator  
 case (brass)

Brai coule = tar  
 Disque de calage (bois) =  
 wooden disk  
 Lut (resine brai) = lute (tar  
 resin)  
 Corps d'amorçage (acier) =  
 steel percussion cap body  
 Gaine relais bronze = bronze  
 relay casing



Hollow Charge. Electric Fuze. Scale: 1:2

MINES WITH HOLLOW CHARGES

Type: Hollow charge with a conical recess

Appearance: Sheet metal, black tar colored:

Total weight: 2.8 kg

Anti-vehicular model:

Weight of explosive: 1.2 kg

Total weight: 4.5 kg

Anti-tank model Nr 1:

Weight of explosive: 2.0 kg

Total weight: 14.0 kg

Nr 11:

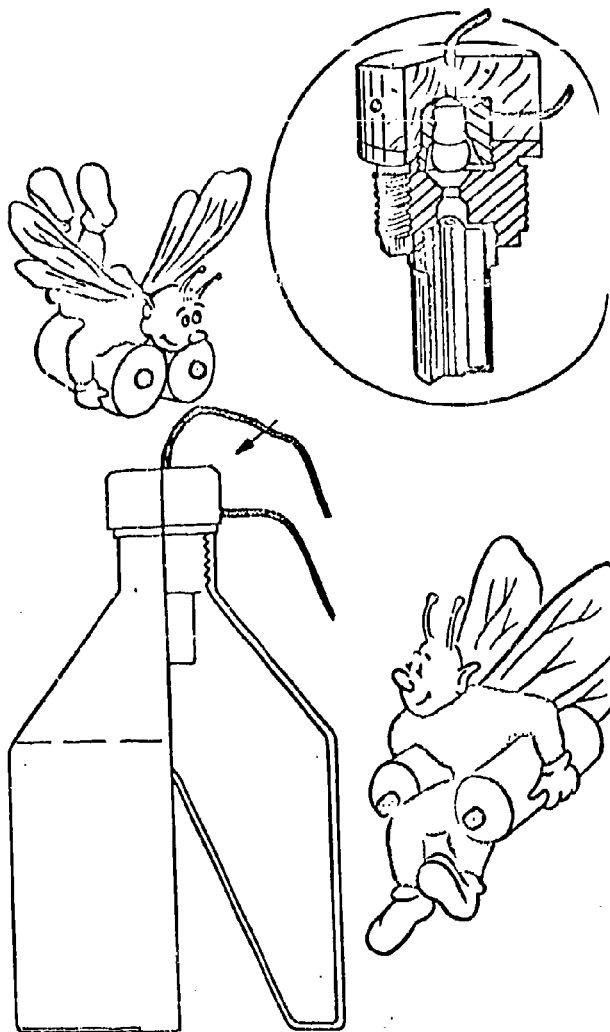
Weight of explosive: 7.0 kg

Functioning: When a vehicle passes over it, the mine, which is electrically ignited, explodes. The explosion is remote controlled by an observer using an exploder or a battery.

Note: Anti-tank model Nr 11 should bring any type of an armored vehicle to a stop.

Neutralizing: Cut the pull chords one at a time. Remove the mine from the ground. It can be carried as is with precaution. Disassembly operations must be carried out by a specialist.

Source: Cochín-China, 1948. Instruction Center of the Corps of Engineers



Beehive Mine. Scale: 1:3

BEEHIVE-TYPE HOLLOW CHARGE MINE

Type: Hollow charge with a conical recess.

Appearance: Made of sheet metal and has a wooden cap. Total weight: 11.5 kg. Explosives: 6 kg of melted melinite.

Functioning: Electrically ignited, the mine is exploded by an observer.

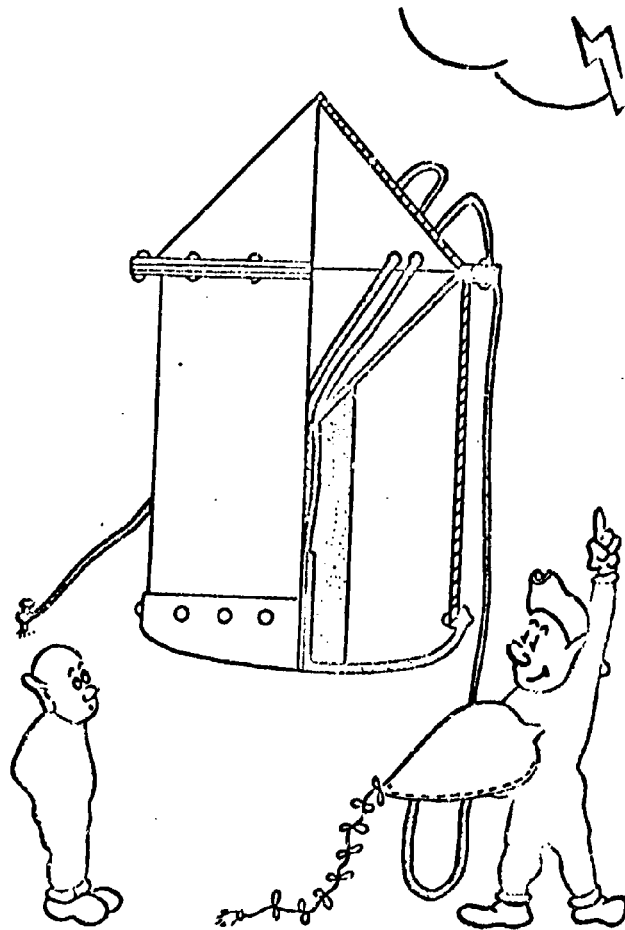
To set: (a) As a mine: Bury it, the base part level with the ground and the igniter underneath.

(b) As a destruction explosive: The base of the mine is placed against the object to be destroyed.

Neutralizing: Cut the lead wires one at a time. Remove the wooden cap.

Note: Although no firing stand that would determine the optimum operating distance has been found, it appears that maximum efficiency can be obtained by placing the mine about 30 cm from the surface of the object to be destroyed.

Source: Cochín-China, 1948. Instruction Center of the Corps of Engineers.



Mine With Hollow Charge (Half-Section). Scale: 1:2

MINES WITH HOLLOW CHARGE

Type: Hollow charge with conical recess

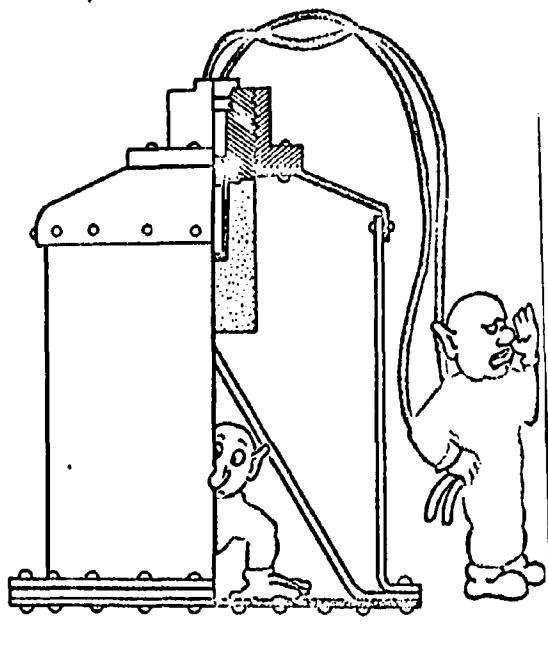
Appearance: Made of sheet metal. Black-tar color. Total weight is 1.4 kg, including about 400 gr of melted melinite.

Functioning: Upon passage of a vehicle, the mine is electrically ignited and explodes. The explosion is carried out by remote control by an observer using an exploder or a battery. This mine can immobilize a vehicle if it explodes beneath a wheel. If it explodes beneath the chassis, the vehicle is damaged slightly.

Neutralizing: Cut at least one electric conductor wire. Remove the mine from the ground. Take off the cone head, take out the lining, and remove the electric firing system. It is preferable to have a specialist do this job.

Note: Some mines of this type have a metal bracket or handle attached to the cone. This allows it to be carried and makes it easier to attach the mine to the object to be destroyed.





Hollow Charge With Electric Igniter. Scale: 1:2

HOLLOW-CHARGE MINE WITH BASE STAMP

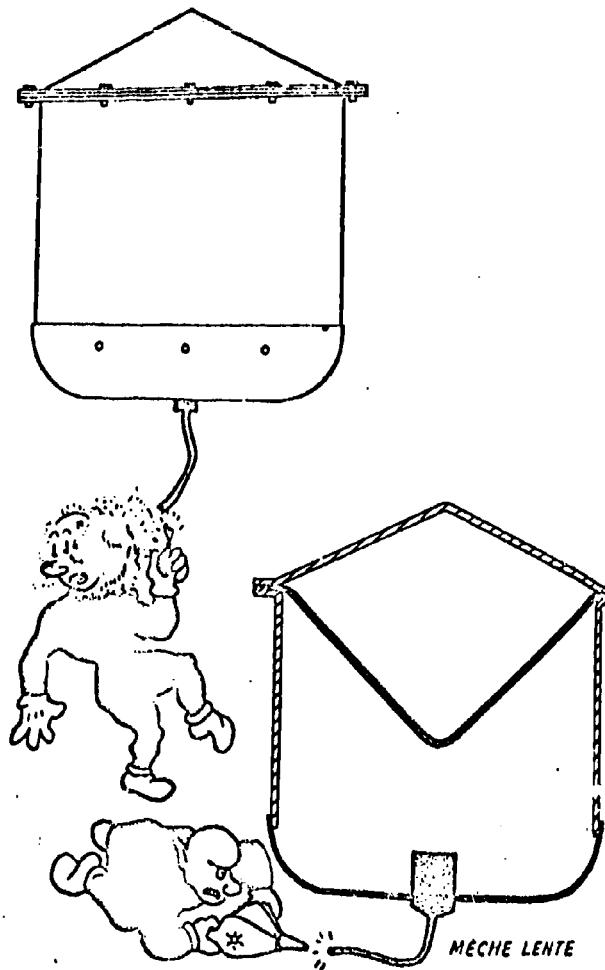
Type: Hollow charge with conical recess

Appearance: Made of sheet metal. Black-tar color. Total weight: 5.2 kg. Weight of explosive: 2.5 kg.

Functioning: When an armored vehicle passes over it, the mine, which is electrically controlled, is exploded by an observer. This explosion shears the caterpillar track on a tank or perforates the interior armor.

Neutralizing: Cut the conductor wires one at a time. Remove the mine from the ground. It can be carried as is with precaution. Disassembly operations should be carried out by a specialist.

Source: Cochin-China, 1948. Instruction Center of the Corps of Engineers.



Hollow Charge. Scale: 1:2

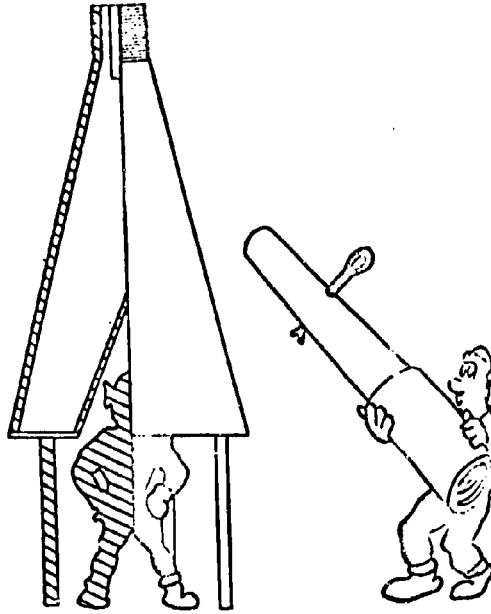
Total weight: 2.5 kg

Weight of explosive: 0.5 kg

Mèche lente = slow-burning fuze

#### V. C. HOLLOW CHARGE

- Dimensions:** This type of mine reportedly exists in several sizes, similar in appearance, varying in explosive charge between 2 and 7 kg.
- Functioning:** It is ignited by means of a slow-burning fuze of variable length. Models with electric fuzes are reportedly in existence. The explosive action is inside a hollow charge; the main action proceeds along the axis of the inside recess.
- Neutralizing:** If a saboteur has been seen in the vicinity and there is doubt as to whether the slow-burning fuze is ignited, stay out of the danger area and wait one hour, if possible, before approaching the mine. If a misfire of the fuze is detected, destroy the mine on the spot. If there was no ignition, then remove the fuze.
- Source:** 1948 information.



Tripod Hollow Charge. Half-Section. Scale: 1:4

TRIPOD HOLLOW CHARGE

Appearance: Resembles the beehive mine. It has three legs which regulate the optimum effective distance. There is no feed line.

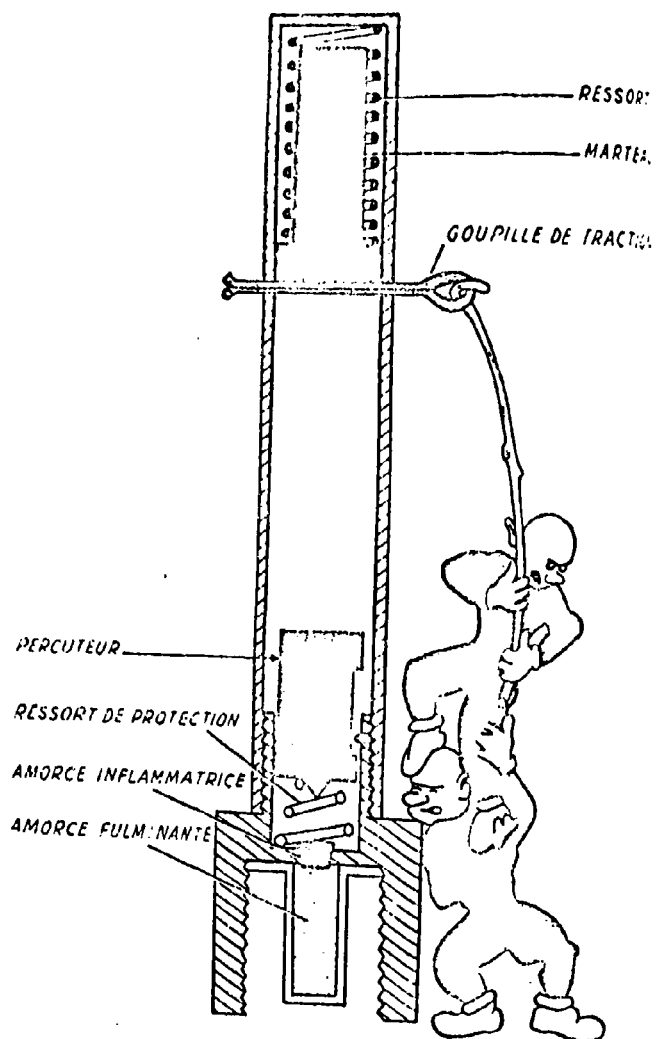
Dimensions: Outer diameter: 18 mm  
Height: 25 mm

Weight of explosive: 2.1 kg

Fuze: Pull-type (see following page)

Neutralizing: Remove the fuze gently.

Source: Munitions Service T.F.S.A.P., April, 1948



# Fuze for Hollow Charge

Percuteur = striker  
 Ressort de protection = protection spring  
 Amorce inflammatrice = primer  
 Amorce fulminante = fulminating cap  
 Ressort = spring  
 Marteau = hammer  
 Goupille de traction = pull pin

FUZE FOR TRIPOD HOLLOW CHARGE

Appearance: Tube with a pull pin passing through it.

Dimensions: Outer diameter = 20 mm.  
Length = 180 mm.

To set: Place the fuze in the upper part of the tripod mine. Attach a pull chord to the safety pin.

Functioning:

In the armed position:

The trigger spring is compressed by the hammer, which is blocked by the safety pin. The striker is held away from the primer by the protection spring.

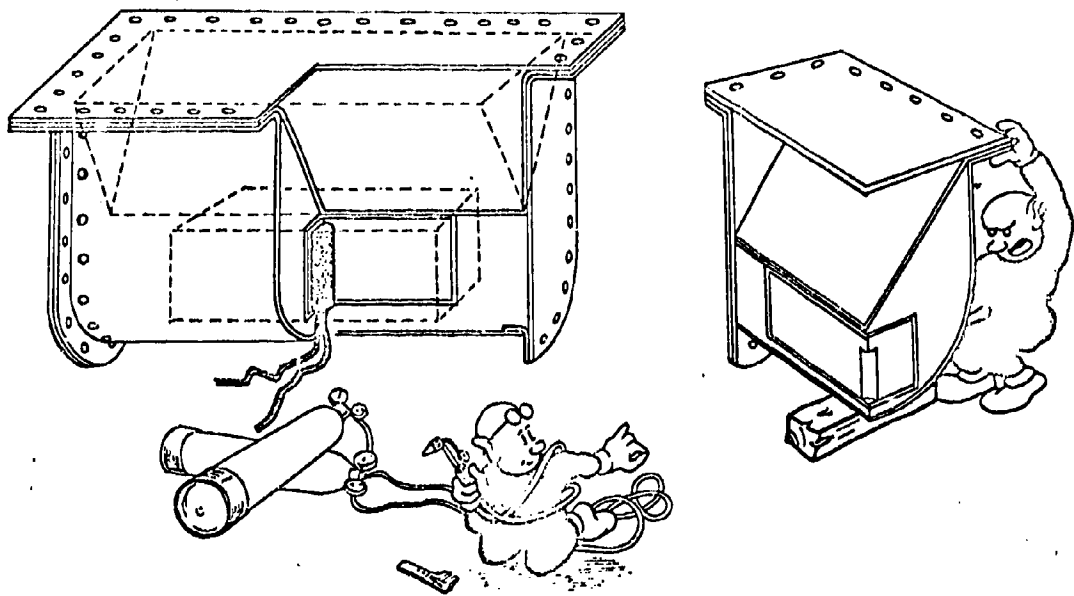
In the firing position:

A pull on the chord releases the safety pin. The hammer is freed and is driven by the operating spring and hits the striker. The striker crushes the protection spring and fires the primer.

Neutralizing: Cut the pull chord and remove the fuze.

Source: Munitions Service T.F.S.A.P., April, 1948.





Elongated Hollow Charge. Scale: 1:2

ELONGATED HOLLOW CHARGE

Type: Hollow Charge with prismatic recess.

Appearance: Sheet metal, red-brick color. Total weight:  
3 kg. Weight of explosive: 600 gr (melinite).

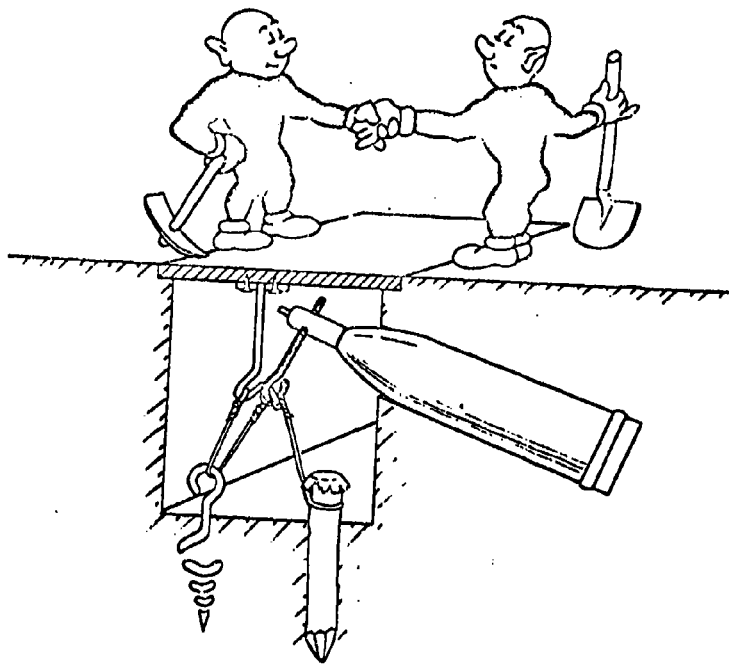
Functioning: The mine is exploded by an operator by means of  
an electric igniter.

To set:

- (a) As a mine: Bury it with the rectangular plate  
even with the surface of the ground.
- (b) As a destruction explosive: The rectangular  
plate is placed against the object to be destroyed.

Neutralizing: Cut the conductor wires one by one. The mine can  
then be carried as is with precaution.

Source: Cochin-China, 1948. Instruction Center of the Corps  
of Engineers.



Anti-Mine-Demolition Booby Trap

ANTI-MINE-DEMOLITION BOOBY TRAP

Type: Operates by pressure or by lifting.

Description: A cylinder-shaped pull-type fuze is placed inside a mine or a shell. A pressure plate is placed on the ground, beneath which a small hook is attached (see sketch).

Functioning: The striker is released by a pull on the safety pin.

-either by pressure exerted upon the plate  
(the hook pulls out the safety pin),

-or, when used as an anti-mine-demolition booby trap:

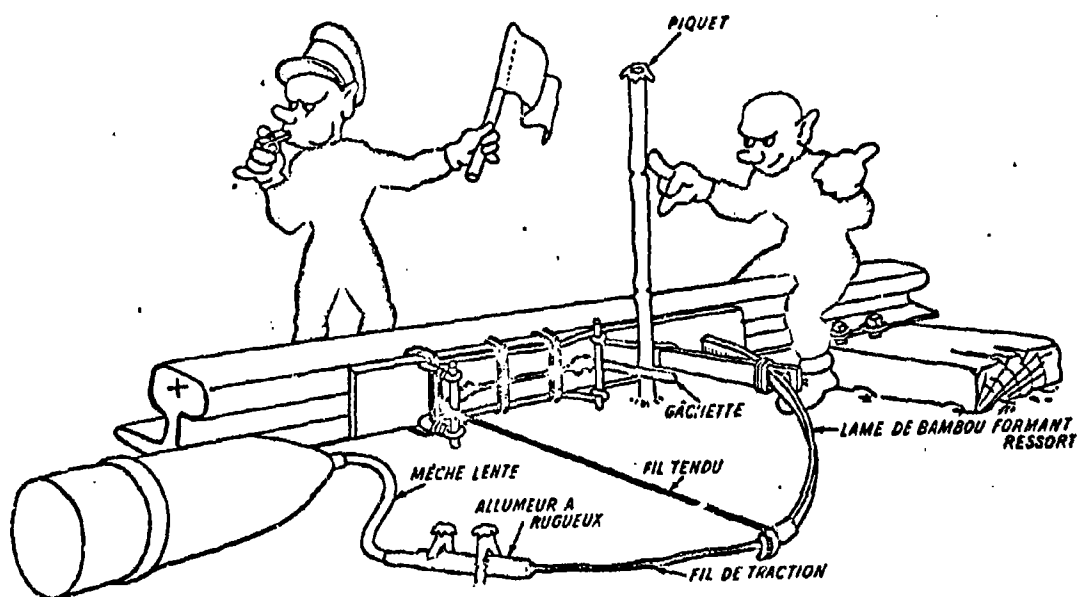
(a) by lifting the plate, the hook releases the safety pin, but the pull chord moves and pulls the pin downward. The trap explodes.

(b) in case the first trap has been discovered, the plate and the hook having been removed, lifting the shell causes the trap still to explode by a pull on the pin by the second chord, which is attached directly to the loop in the pin.

Note: Possibly booby-trapped with a grenade underneath the base of the shell.

Neutralizing: Destroy in place.

Source: Nam-Dinh, Tonkin, 1947.



Device for Destroying a Railroad Track During Passage of a Convoy

Mèche lente = slow-burning fuze

Allumeur à rugueux = percussion pin

Gachette = trigger

Fil tendu = taut wire

Fil de traction = pull chord

Piquet = peg

Lame de bambou formant ressort = bamboo piece acting as a spring

# BOOBY TRAP FOR SABOTAGING A TRAIN

Charge: The charge consists of a 155-mm Japanese shell.

To set: A detonator cap is placed inside the shell chamber and connected to a striker by means of a slow-burning fuze. The length of this fuze is calculated so that the charge explodes underneath the locomotive after passage of the lead cars.

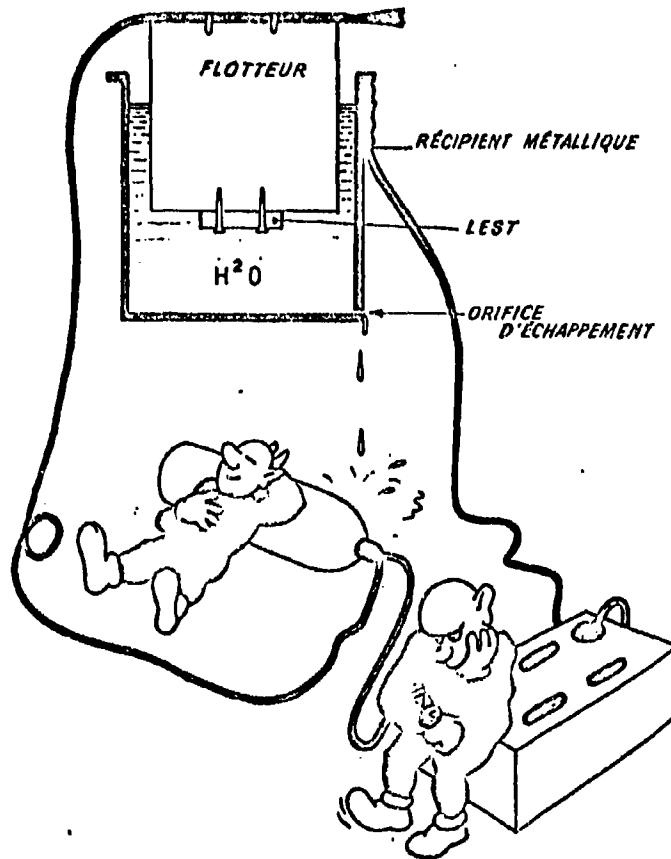
Armed position: The pull chord of the fuze is attached to a piece of bamboo acting as a spring. This bamboo piece, in the shape of a semi-crossbow, is tied with a chord. This chord passes underneath a stirrup and is attached to a stick of wood that acts as a trigger. This trigger is blocked by a peg that is sunk into the ground.

Firing position: The passage of the first lead car of a convoy presses down on the peg supporting the trigger. The pull chord is freed and slips underneath the stirrup. The bamboo piece is suddenly loosened, which causes a quick jerk on the chord of the percussion pin. Ignition takes place. The fire is transmitted by the slow-burning detonating fuze and the shell explodes.

Neutralizing: First, cut the pull chord on the percussion pin. Remove the detonator cap from the shell. Loosen the bow and dismantle the system.

Caution: Watch out that your shins don't touch the device.

Source: Corps of Engineers T.F.I.N. Hanoi-Haiphon railroad, April, 1948.



Delayed-Action Clepsydra (Water-Clock) Contactor

Flotteur = floater  
Récipient métallique = metal vessel  
Lest = ballast  
Orifice d'échappement = drainage port

### CLEPSYDRA (WATER CLOCK) CONTACTOR

**Appearance:** Any type of metal box filled with water with a floater visible on the inside. An inside port allows the water to empty out.

**Functioning:** In the armed position:

The metal vessel is full of water. The ballasted floater keeps the upper contact away from the fixed contact at the bottom of the vat. The water empties out through the inside port of the vessel.

In the firing position:

Once the water level is lowered, the upper contact of the floater touches the vessel and the electric circuit for igniting is shut off.

**Note:** The delay time depends on the volume of water at the start of the operation and the rate of emptying.

**Neutralizing:** Cut the wire leading to the vessel.

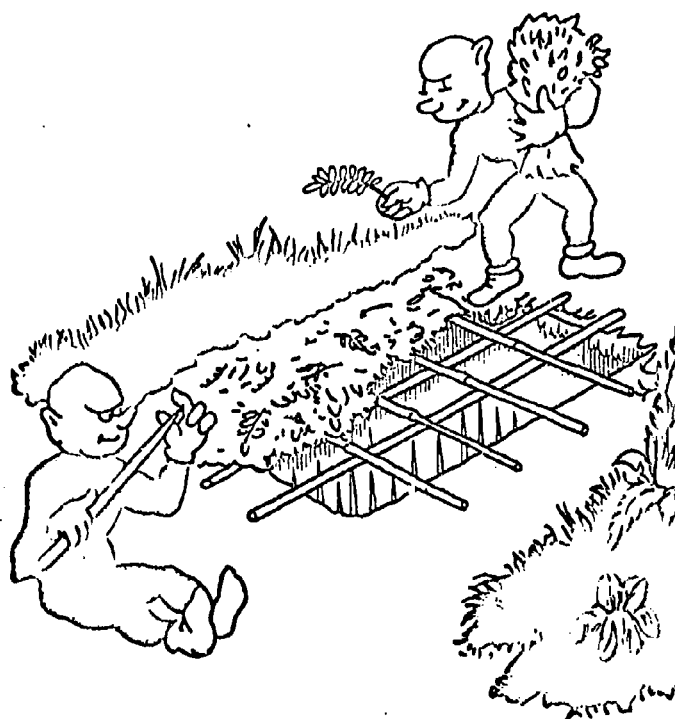
**Caution:** Any movement of the chord on the floater can cause the floater to vibrate and cause an accidental shutting of the electric current.

**Source:** Tan An Artillery Sector, Cochín-China, 1948.





## PANJI - PITS



#### WORDS OF ADVICE

Do not neglect any opportunity to know the enemy's weapons and, when possible, try to understand how they work.

When you discover a mine, don't call for your co-team workers to "come and see what this is", but tell them to go away and, if you can, disassemble or destroy the mine on the spot.

If you find something new, beware. If you are sure that you can disassemble it without any risk, do so. Afterwards, forward the device or a good sketch of it to the closest engineering unit so that everyone can profit from your discovery.

If you encounter a type of mine that you're not familiar with and that does not appear to be simply constructed, call the engineers.

Remember that the enemy generally prefers to destroy a road rather than to repair it. Therefore, if you see some repair work or a newly filled hole some place where the engineers have not been working, beware.

Always avoid stopping your vehicle directly over a patch in the road. You may not always see that one of your wheels has stopped directly on a trip wire.

Beware of a pile of stones, as these greatly increase the effectiveness of a mine. The enemy knows this and very frequently uses this type of an arrangement.

If you intend to destroy disarmed, but unprimed, weapons, always destroy them one at a time and not by the dozen. The best thing to do is to drown the weapons in very deep water.

Remember that a misfire of a mine can be caused by an accidental blocking of the firing pin (e.g., by some dust or by rust, by a wrongly pulled safety pin causing it to lock, etc.).

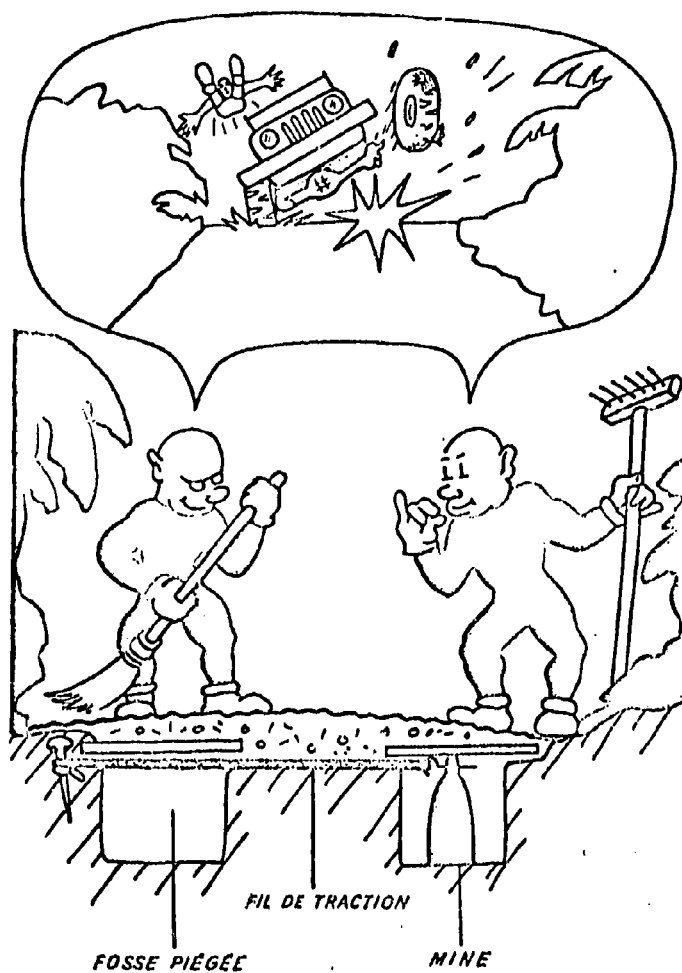
The slightest movement can cause a catastrophe. There is less danger in fooling around with a snake than there is in pulling out a safety "in any ole way". Therefore, it is best to destroy a mine directly on the spot without touching it.

A mine that is accidentally moved (by a vehicle, a gust of wind, etc.) must be thought of as though it were "about to explode" and treated as such.

Don't be tempted to start a collection of your finds.

Remember that explosives that are used as "little pranks" generally end tragically.

Avoid being sorry later and get rid of everything that is not absolutely inert.



Fosse piegee = pit with booby trap  
Fil de traction = trip wire  
Mine = mine

INSTRUCTIONS IN EFFECT FOR LAYING, MARKING, AND RECORDING  
MINE FIELDS

(Indochina, 1948)

1. Authority deciding upon the laying of mine fields.

5. ( It is up to the Commanding Generals of the Territories to  
decide

- (a) upon the advisability of laying mines
- (b) the objective to be attained
- (c) the zones or points to be covered.

2. All mine fields (including phony mine fields and possibly enemy mine fields that have been traversed by our troops) are to be marked and recorded.

3. Definitions

Mine strip: A portion of a mine field where the mines are laid according to a definite plan and at a fixed density.

Mine field: An area containing more than one mine strip. Between or around the strips there may be some dispersed groups of mines or mine areas.

Density: Number of mines per meter of land.

4. Marking

(a) Restricted enclosures of the mine field

When tactical conditions allow it, the mine field is surrounded by a wire fence. The fence consists of two rows of smooth or barbed wire. Triangular-shaped pieces of tin with a .2-meter spot of red paint on one side will be attached to the wire about every 30 meters. The fence does not have to follow the contour of the mine field exactly. Bilingual signs as shown below are to be placed in conspicuous places around the mine field.



(b) Reference landmarks

They consists of permanent points already in existence and indicated on an already available map. If such points do not exist within a reasonable distance, an artificial landmark can be made up.

(c) Reference points

They consists of permanent points, some of which are associated with reference landmarks by the stratum. Distances must be measured exactly.

All reference points must be within the restricted enclosure of the mine field, at one end of the mine strip, and 10 meters away at most from a corner mine.

5. Recording

It is absolutely necessary to maintain an accurate and complete list of all the mines that have been laid. This list must conform with regulations.

Information sheets. They are to be prepared according to the diagrams on the following pages. All information asked for must be filled in. One sheet must be used for each mine field, unless the field is longer than 45 meters, in which case it is recommended that supplementary sheets be used.

Map of the mine field. It is necessary and indispensable to have a complete map drawn up at a scale greater than 1:2000. The map is to be drawn black on white, with the details concerning anti-personnel mines and booby traps shown in red.

#### PREPARATION, TRANSMITTAL, AND PRESERVING OF DOCUMENTS

The laying of a mine field is to be done only in the presence of an officer or noncommissioned officer who is a specialist in the Corps of Engineers.

The specialist will ensure that the entire mine field is in view and is covered with the weapons of the post.

After the officer of the Corps of Engineers has supervised the laying of the mine field, a diagram is to be drawn up immediately according to regulations.

The original copy of this diagram will be kept among the documents of the post.

Five copies are to be sent to each of the following authorities:

- Commander of the Subsector (1 cy)
- Commander of the Sector (1 cy)
- Commander of the Territorial Corps of Engineers (1 cy)
- Commander of the Corps of Engineers of the F.T.E.O.\*  
in care of the Territorial Corps of Engineers (2 cys)

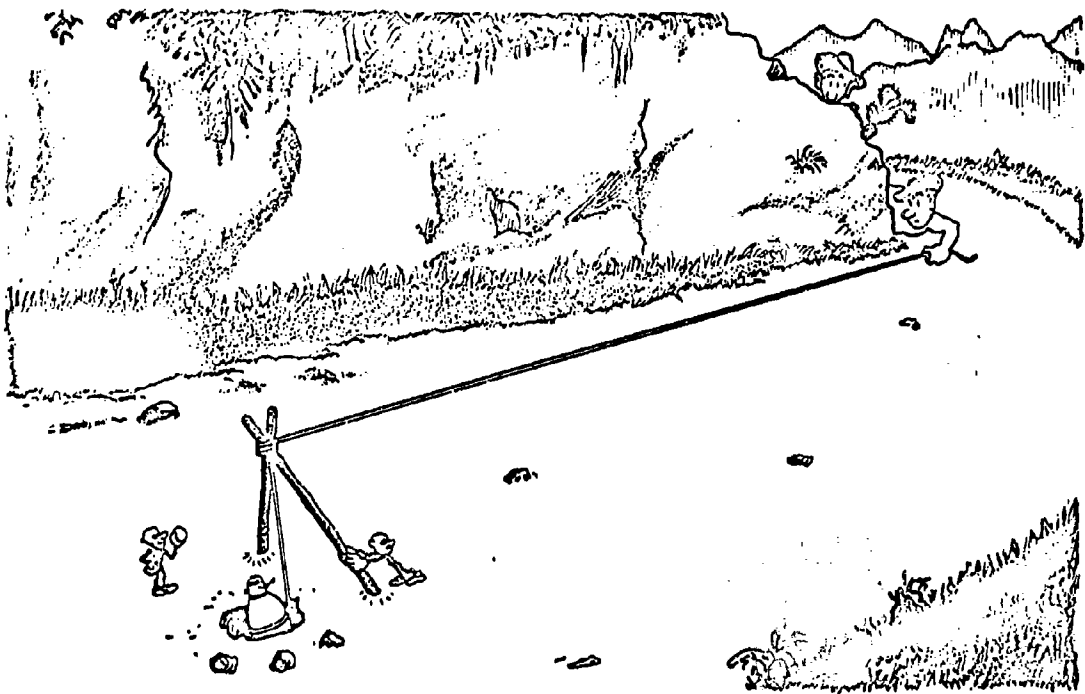
If no representative of the Corps of Engineers is present at the post or if none can be called in for a major reason, it will be the responsibility of the commandants of the sectors to have the map of the mine fields that they have laid drawn up and to send the copies to the aforementioned authorities.

Any theft or presumed theft of a copy of a document concerning the laying of a mine field must be immediately made known to the command headquarters, which will be the sole judge of the countermeasures to be taken.

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\*Translator's note: Abbreviation unknown, but may be Forces Territoriales de l'Extrême-Orient (Far East Territorial Forces).

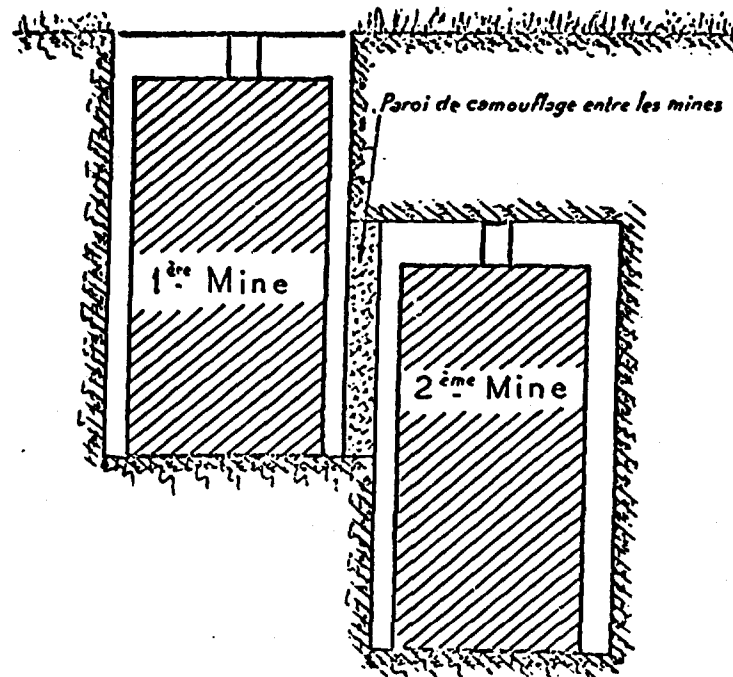




# A SPECIAL PROCEDURE FOR LAYING MINES BY THE V. C.

A special procedure for laying double mines by the V. C. has just been discovered in one sector and warrants being publicized for purposes of instruction. This procedure was able to be studied as a result of the intervention of a friendly patrol which came upon a V. C. road-mining team.

The drawing below shows how the detection and removal of the first mine gives the demolition men only an illusory impression of safety, since the second undetected mine is still capable of functioning when a vehicle passes over it.



Paroi de camouflage entre les mines = camouflaged partition between the mines

APPENDIX

--

RECENT TYPES OF MINES AND WEAPONS  
USED BY THE V. C. TROOPS

### GRENADE-TYPE NINE

Purpose: Anti-personnel mine

Description:

Body:

- (1) Body is made of cast iron with serrations for fragmentation effect (shaped like a defensive hand grenade).

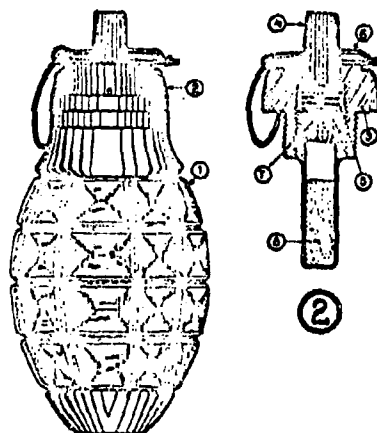
Charge:

Consists of either black powder or an explosive

Fuze:

- (2) Instantaneous, mechanical pressure-type fuze, which consists of

- (3) a steel body
- (4) a striker
- (5) a safety spring
- (6) a safety pin
- (7) a primer
- (8) a detonator



Total weight: 0.8 kg

Weight of explosive: 0.1 kg

Diameter: 6 cm

Height: 13 cm

Functioning: Once the safety pin is removed, a pressure on the striker causes the primer to function.

### BAMBOO MINE

Purpose: Anti-personnel mine

Description:

Body:

- (1) Body consists of a piece of bamboo stick
- (2) Wooden obturators

Charge:

- (3) Charge consists of a small roll of compressed black powder

Projectiles

- (4) Makeshift projectiles consisting of stones and pieces of glass or porcelain

Fuze: Instantaneous pressure-type fuze consisting of:

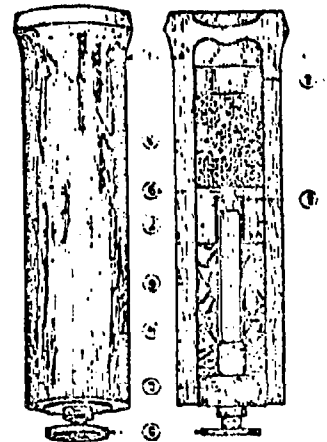
- (5) wooden striker with a metal tip
- (6) guide tube of the wooden striker
- (7) separator section made of wood, consisting of:
  - (8) a primer
  - (9) a hole for the trip wire

Total weight: 0.5 kg (approx.)

Weight of explosive: 0.1 kg (approx.)

Diameter: 5 to 6 cm (approx.)

Height: 22 cm (approx.)



Functioning: The mine is buried in a vertical position with the striker in position. A mere push on the striker causes the primer to break and the mine to explode. If a pile of material is placed around the mine, the projectiles will shoot upwards.

# WIDE-MOUTHED BOTTLE MINE

Purpose: Anti-personnel and anti-vehicular mine

## Description:

### Body:

- (1) Cast-iron body with serrations for fragmentation effect. Shaped like a wide-mouthed bottle.

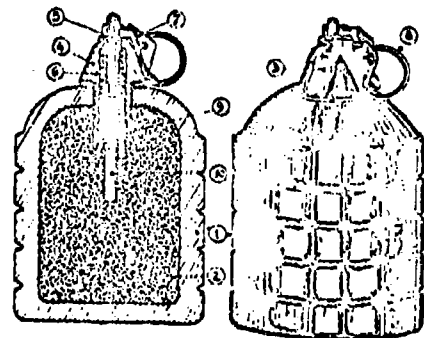
### Charge:

- (2) The charge consists of an ammonium nitrate explosive.

### Fuze:

- (3) Instantaneous mechanical fuze with a pull-type safety pin. The fuze is made up of:

- (4) a light-alloy body
- (5) a striker
- (6) a striker spring
- (7) a striker lever
- (8) a starter pin
- (9) a primer
- (10) a detonator



Total weight: 3.8 kg

Weight of explosive: 0.85 kg

Diameter: 11 cm

Height: 17 cm

Functioning: A pull on the trip wire causes the safety pin to come out. The lever releases the striker which, acted upon by its spring, fires the primer.

Observations: The explosive used in this mine is a very shattering type of explosive. It is of a type that is little known and little used. It has some similarities to the amonals in particular.

PINEAPPLE MINE

Purpose: Anti-personnel mine

Description:

Body:

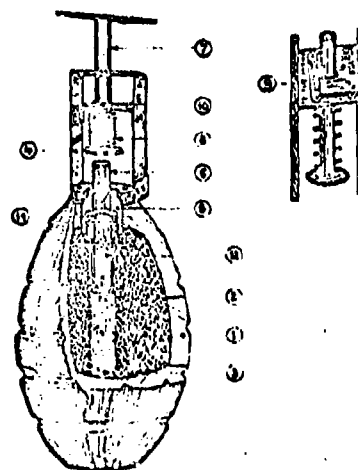
- (1) Cast-iron body with serrations for fragmentation effect. Shaped like a pineapple.

Charge:

- (2) An ammonium nitrate explosive
- (3) powdered melinite relay

Fuze: Instantaneous mechanical fuze (pull-release type), consisting of

- (4) sheet-metal frame
- (5) plug for the cap chamber and striker chamber
- (6) striker
- (7) T-shaped hammer with a notch in the handle for a bolt
- (8) hammer spring
- (9) bolt
- (10) bolt spring
- (11) primer
- (12) detonator



Total weight: 2 kg

Weight of explosive: 0.27 kg

Diameter: 9 cm

Height: without fuze: 12 cm  
with fuze: 21 cm

Functioning:

Pull-type: In the armed position, the hammer spring is pressed tight and the bolt is fitted into the notch on the handle. A pull on the pull chord, which is tied to one of the arms of the hammer, causes the hammer to pivot. The bolt is released and the primer is broken.

Release-type: In the armed position, the hammer spring is held tight by a pull chord without using the bolt. Breaking this chord causes the mine to function.

Observations: The striker, which is removable, is placed into position only when the fuze is in the armed position.



### BOUNDING MINE

Purpose: Sounding anti-personnel mine

Description:

The projectile is made up of:

- (1) 81-mm mortar explosive projectile without empennage
- (2) explosive charge
- (3) detonator
- (4) black powder delay

The cannon tube consists of:

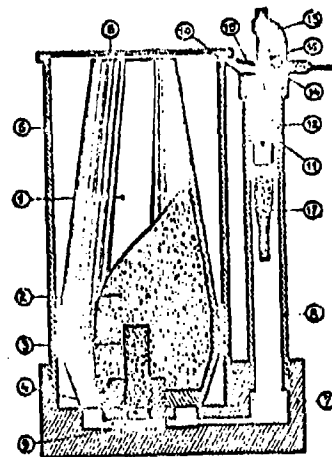
- (5) metal launch tube
- (6) metal cover
- (7) metal base
- (8) cap chamber tube

Spill charge: :

- (9) smokeless powder

The pull-type instantaneous mechanical igniter consists of:

- (10) body
- (11) striker
- (12) striker spring
- (13) release
- (14) safety bolt
- (15) safety grip
- (16) safety pin
- (17) primer cartridge



Total weight: 7.35 kg

Weight of the projectile: 3.1 kg

Weight of cannon tube: 5.1 kg

Weight of fuze: 0.15 kg

Weight of spill charge: 0.009 kg

Height: 22 cm

Diameter: 14 cm

Functioning: Once the safety pin and safety grip are removed, a pull on the pull chord causes the release to pivot and the bolt to come out. The striker is freed and strikes the primer cartridge. The spill powder drives the projectile and ignites the delay-action fuze. The projectile explodes above ground.

# SOUNDING BAZOO MINE

Purpose: Sounding anti-vehicular mine with hollow charge.

## Description:

The bazoo mine consists of:

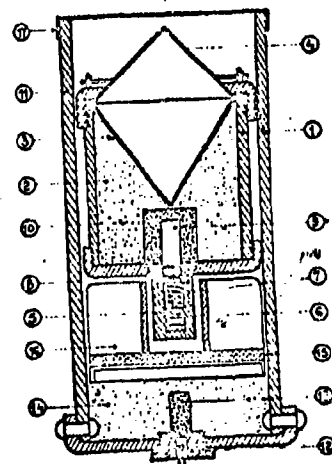
- (1) steel cylinder body
- (2) melted melinite explosive charge
- (3) cone-shaped metal (bronze) casing for the hollow charge
- (4) sheet-metal cover
- (5) striker
- (6) safety pin
- (7) safety spring
- (8) primer
- (9) detonator
- (10) powdered melinite for the relay of the initial priming

The cannon tube (11) contains:

- (12) electric fuze
- (13) igniter powder
- (14) black powder spill explosive
- (15) cardboard partition
- (16) separator
- (17) metal lid

Total weight: - -

weight of explosive: 1 kg



Weight of spill charge: - -

Diameter of mine: 15 cm

Height of mine: 25 cm

Diameter of cannon tube: 17 cm

Height of cannon tube: 38 cm

**Functioning:** The bazoo mine is placed in the cannon tube without the safety pin. Setting off the electric fuze causes the spill charge to ignite, which thrusts the bazoo mine out of the cannon tube. As soon as the bazoo mine hits an object, the striker functions by inertia.

**Observations:** There is also a nonleaping bazoo mine in which the mechanical fuze (with a striker) is replaced by an electric fuze.

### MINE WITH HOLLOW CHARGE

Purpose: Anti-vehicular and anti-personnel mine

Description:

Mine:

- (1) cylindrical sheet-metal body
- (2) metal lining of the cone-shaped hollow charge

Charge:

- (3) nitrate explosive

Fuze:

- (4) steel body
- (5) striker
- (6) striker spring
- (7) starter pin
- (8) primer
- (9) detonator

Total weight: 5 kg (approx.)

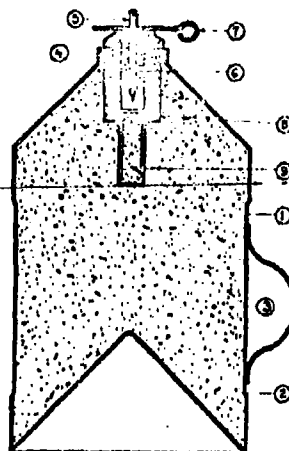
Weight of explosive: 3.5 kg (approx.)

Diameter: 12 cm

Height: 21 cm

Functioning: A pull on the pull chord causes the starter pin to come out. The striker is released and strikes the primer.

Observations: There is an identical mine that is equipped with fold-back legs, which enables it to be placed at a suitable distance from the wall to be destroyed (optimum yield).



# UNDERWATER MINE

Purpose: For use against river boats

## Description:

### Mine body:

- (1) sphere-shaped body made of 4-mm-thick sheet metal
- (2) carriage ring
- (3) attachment ring
- (4) sealer plug
- (5) stopper plug for inserting the conductor wires

### Explosive charge:

- (6) melted melinite

### Detonator:

- (7) two electric primers with different resistances
- (8) initial priming relay made of powdered melinite

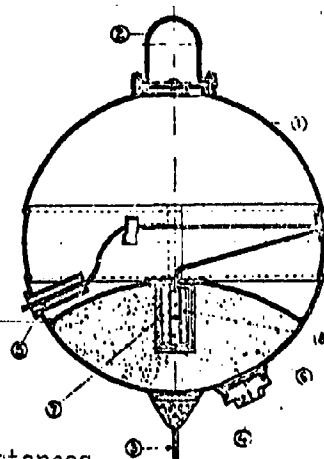
Total weight: 43 kg

Weight empty: 19 kg

Weight of explosive: 24 kg

Diameter: 0.52 m

**Functioning:** Remote-controlled mine. The passage of the current causes the electric detonators to ignite and the mine to explode.



# UNDER WATER MINE

Purpose: For use against river boats

## Description:

### Mine body:

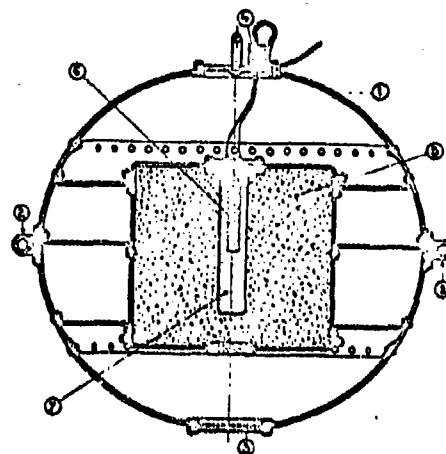
- (1) spherio-shaped body made of 2-mm thick sheet metal
- (2) attachment rings
- (3) sealer plug
- (4) stopper plug for inserting the conductor wires

### Charge:

- (5) ammonium perchlorate

### Detonator:

- (6) electric primer
- (7) powdered melinito primer relay



Total weight: 42 kg

Weight empty: 20 kg

Weight of explosive: 22 kg

Diameter: 0.63 m

Height: 0.58 m

Functioning: Remote-controlled mine. The passage of the current causes the electric detonator to ignite and the mine to explode.

### TIME-FUZE HARD GRENADE

Purpose: Anti-personnel defensive grenade

Throw method: By hand

Description:

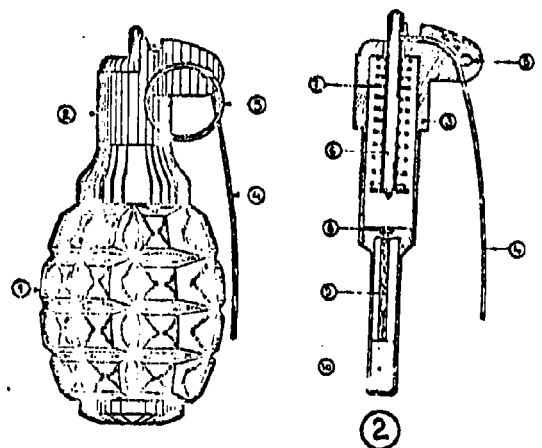
Grenade body:

- (1) cast-iron body with serrations for fragmentation effect

Charge: black powder

Detonation:

- (2) time fuze-type fuze plug, which consists of:
  - (3) light-alloy body
  - (4) release lever
  - (5) safety pin
  - (6) striker
  - (7) striker spring
  - (8) primer
  - (9) slow-burning fuze
  - (10) black powder relay



Total weight: 0.66 kg

Weight of body: 0.5 kg

Weight of fuze plug: 0.1 kg

Weight of explosive: 60 gr

Diameter: 60 mm

Height: 125 mm

Time delay: about 5 seconds



Functioning: Once the safety pin is removed, the release lever is freed and the striker fires the primer under the action of the spring. The slow-burning fuze (delay-action) burns for about 5 seconds.

### TIME-FUZE HAND GRENADE

Purpose: Anti-personnel defensive hand grenade

Throw method: By hand

Description:

Grenade body:

- (1) cast-iron body with serrations for fragmentation effect

Explosive charge: black powder

Detonation:

- (2) time fuze-type fuze plug, which consists of:

- (3) light-alloy body

- (4) release lever

- (5) safety pin

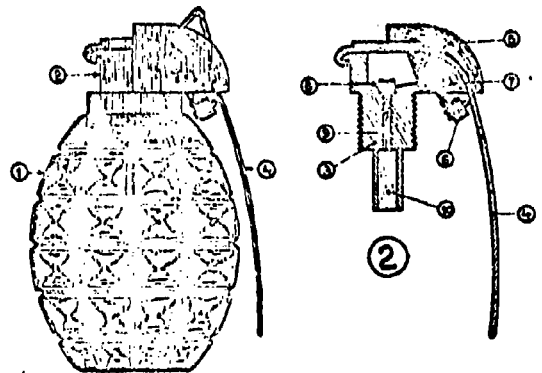
- (6) striker

- (7) striker pin

- (8) primer

- (9) slow-burning fuze

- (10) detonator



Total weight: 0.65 kg (approx.)

Weight of body: 0.49 kg (approx.)

Weight of fuze plug: 0.1 kg (approx.)

Weight of explosive: 60 gr (approx.)

Diameter: 55 mm

Height: 100 mm

Time delay: about 5 seconds

Functioning: The safety pin is removed, the release lever is freed, and the striker fires the primer under the action of its spring. The slow-burning fuze (delay-action) burns for about 5 seconds.

Observations: The fuze plug is a copy of the American fuze plug MGA III.

PULL-TYPE HAND GRENADE

Purpose: Anti-personnel defensive grenade

Throw method: By hand

Description:

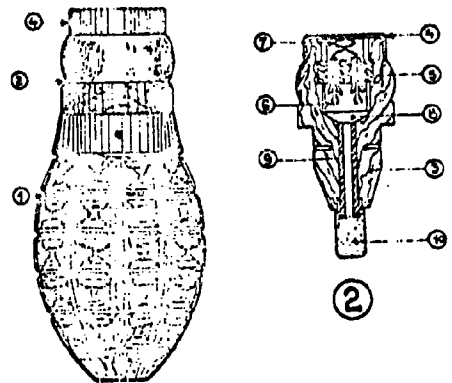
Grenade body:

- (1) cast-iron body with serrations for fragmentation effect

Explosive charge: black powder

Detonation:

- (2) pull-type, time-fuze-type fuze plug, which consists of
  - (3) wooden piece attached to the body by two pins
  - (4) metal cover
  - (5) capsules containing the fuzeing material
  - (6) percussion pins
  - (7) chord and pull ring
  - (8) igniter paste
  - (9) slow-burning fuze
  - (10) black powder relay



Total weight: 0.75 kg

Weight of body: 0.53 kg (approx.)

Weight of fuze plug: 0.15 kg (approx.)

Weight of explosive: 70 gr

Diameter: 55 mm

Height: 115 mm

Time delay: about 7 seconds

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Functioning: Remove the metal cap. Pull on the pull ring. Toss the grenade. The friction of the percussion pins causes the fuze material in the capsules to ignite. The igniter paste is lit and this in turn ignites the slow-burning fuze.

# PERCUSSION MINE GRANADE

Purpose: Anti-personnel defensive grenade

Throw method: By hand

Description:

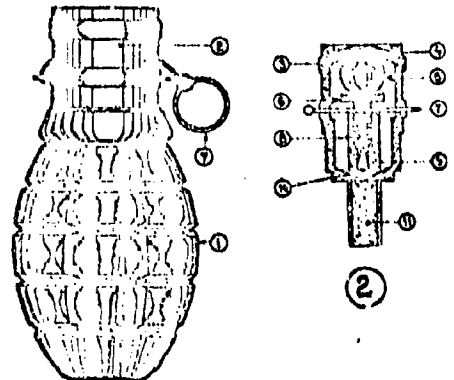
Body:

- (1) cast-iron body with serrations for fragmentation effect

Explosive charge: black powder

Detonation:

- (2) percussion-type fuse plug, consisting of:
  - (3) tin body
  - (4) cone-shaped inside stop plug
  - (5) lead ball
  - (6) striker with hollow head
  - (7) safety pin
  - (8) safety spring
  - (9) movable cap chamber
  - (10) primer
  - (11) black powder relay



Total weight: 0.645 kg

Weight of body: 0.415 kg

Weight of fuse plug: 0.17 kg

Weight of explosive: 60 gr

Diameter: 60 mm

Height: 115 mm

Functioning: Once the safety pin is pulled out, the fuze plug functions at the least bit of shock and at any angle of fall (heavy ball, movable cap chamber and conical notches in the stop plug, and the striker head).

Observations: This fuze plug is a copy of the British fuze plug "Mllewais", which is used to ignite "Gammion bomb" grenades. It is worthy to note that the throwing of this grenade presents a certain amount of danger to the thrower, as the safety spring is very weak and there is no safety gasket.

# INCENDIARY HAND GRENADE

Purpose: Incendiary grenade

Throw method: By hand

Description:

Grenade body:

- (1) cylindrical sheet-metal body
- (2) relay casing filled with black powder

Charge:

- (3) incendiary composition  
(solution of latex in benzine)
- (4) igniter charge consisting  
of black powder

Detonation (time-fuze-type fuze plug):

- (5) fuze body
- (6) movable striker
- (7) safety pin
- (8) safety spring
- (9) vent
- (10) fulminating cap
- (11) slow-burning fuze

Total weight: 0.3 kg (approx.)

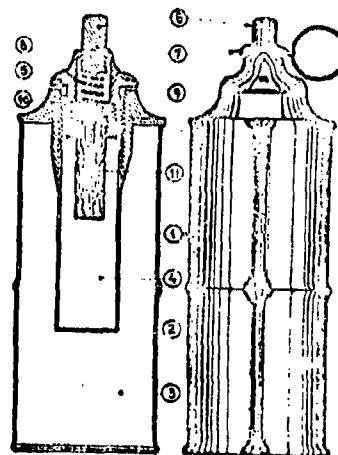
Weight of igniter charge: 20 gr

Weight of incendiary composition: - -

Time delay: 4 seconds

Diameter: 53 mm

Height: 170 mm





Functioning: Remove the safety pin. Hit the striker against a hard object. Toss the grenade. The slow-burning fuze burns for about 4 seconds and causes the gun-powder igniter charge to detonate. The incendiary composition is lit and scattered.

Observation: This grenade can also be considered as an explosive-type grenade.

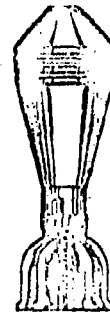
SOME DIFFERENT TYPES OF GRENADES FOR 50-MM GRENADE LAUNCHERS  
AND BOMB LAUNCHERS



Grenade with vanes



Japanese M.91-type  
grenade with propelling  
charge



50-mm projectile  
without propelling  
charge



50-mm projectile



Japanese M.91-type  
grenade without  
propelling charge



Bomb with stick  
handle

50-MM GRENADE WITH VANES FOR GRENADE LAUNCHER

Purpose: Anti-personnel defensive grenade

Method of launch: 50-mm grenade launcher

Description:

Body:

- (1) cylindrical cast-iron body with serrations for fragmentation effect

Charge:

- (2) Either an explosive or black powder

Detonation: Time-delay device, consisting of:

- (3) a relay primer
- (4) a delay mechanism consisting of the slow-burning fuze

Empennage:

- (5) made of light alloy and consisting of 5 vanes

Propelling charge:

- (6) black powder
- (7) cap chamber plug

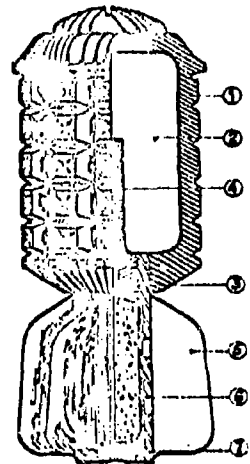
Total weight: 0.52 kg

Weight of explosive: 30 gr (approx.)

Weight of propellant: 4 to 5 gr

Diameter: 50 mm

Length: 113 mm



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Time delay: 12 seconds

Maximum range: 400 meters

Functioning: Upon launch, the propellant propels the grenade and ignites the time fuze by means of the relay primer.

50-12. GRANADE FOR GRANADE LAUNCHER

Purpose: Anti-personnel defensive grenade

Launch method: 50-mm grenade launcher;  
By hand (possibly)

Description:

Body:

- (1) cylindrical cast-iron body with serrations for fragmentation effect; has two bands

Charge:

- (2) either an explosive or black powder

Detonation: time fuze on the headpiece, consisting of:

- (3) light-alloy body
- (4) striker
- (5) safety pin with two arms
- (6) safety spring
- (7) primer
- (8) vents
- (9) delay mechanism consisting of a slow-burning fuze
- (10) detonator

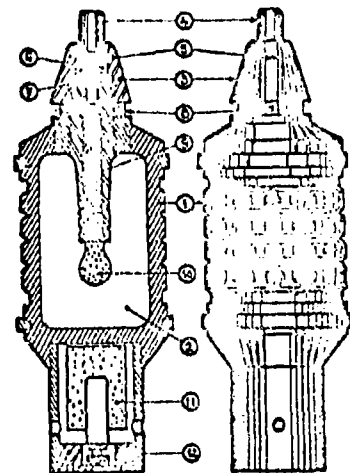
Propelling charge:

- (11) black powder or ballistite
- (12) cap chamber plug

Total weight: 0.5 kg (approx.)

Weight of explosive: 60 gr (approx.)

Weight of propelling charge: - -



Diameter: 50 mm

Length: 150 mm

Time delay: 12 seconds

Maximum range: 400 meters

Functioning: Once the safety pin is removed, the grenade operates by inertia after launch. When the grenade is launched by hand, the thrower must first exert pressure on the primer by hitting the head of the striker.

Observation: This is a Japanese M.91-type grenade.

### 50-mm EXPLOSIVE PROJECTILE FOR GRENADE LAUNCHER

Purpose: Anti-personnel explosive projectile with vanes

Method of launch: 50-mm grenade launcher with movable breech

Description:

Body:

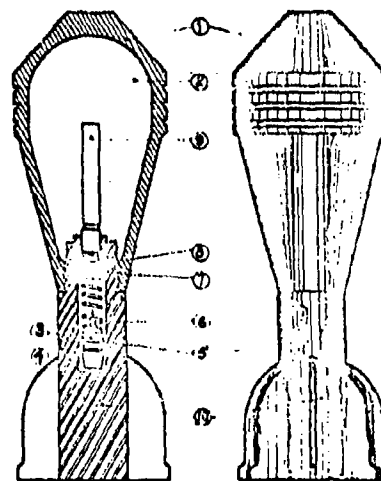
- (1) cast iron and hemispherical ogive in shape

Charge:

- (2) either an explosive (melinite) or black powder

Detonation: Percussion fuze on the base, consisting of:

- (3) heavy notched striker
- (4) safety pin
- (5) obturating ring around the safety pin hole
- (6) safety spring
- (7) primer
- (8) vents
- (9) detonator



Lapennage:

- (10) made of light alloy and consisting of 6 vanes

Propelling charge: independent of the grenade

Total weight: 0.8 kg

Weight of explosive: 30 gr (approx.)

Weight of propelling charge: - -

Diameter: 50 mm

Length: 175 mm

Maximum range: --

Functioning: Once the safety pin is removed, the projectile operates by inertia. Upon impact, the striker compresses the safety spring and fires the primer.



### 50-MM EXPLOSIVE PROJECTILE FOR CHENABH LAUNCHER

Purpose: Anti-personnel explosive projectile with vanes

Method of launch: 50-mm grenade launcher and mortar

Description:

Body:

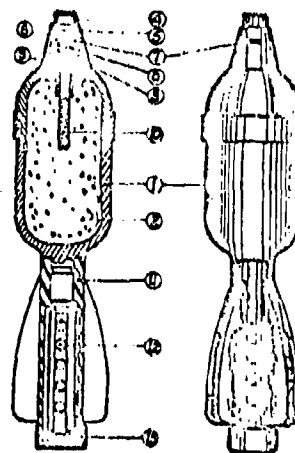
- (1) cast-iron body with a band around it

Charge:

- (2) either an explosive (melinite) or black powder

Detonation: Time fuze on the headpiece, which consists of:

- (3) steel body
- (4) light-alloy headpiece
- (5) shear pin
- (6) striker
- (7) safety pin with two arms
- (8) safety spring
- (9) primer
- (10) detonator



Empennage:

- (11) made of light alloy and has 6 vanes

Propelling charge:

- (12) black powder
- (13) cap chamber plug

Total weight: - -

Weight of explosive: 150 gr (approx.)

Weight of propelling charge: 6 gr

Diameter: 50 mm

Length: 228 mm

Maximum range: --

Functioning: Once the safety pin is pulled out at the beginning of launch, the propellant propels the projectile. Upon impact, the device operates by ramming. The headpiece of the projectile breaks, the shear pin ruptures, and the primer is broken.

### 50-MM RIFLE GRENADE FOR GRENADE LAUNCHER

Purpose: Anti-personnel defensive grenade

Method of launch: 50-mm grenade launcher with movable breech;  
rifle equipped with a grenade sleeve; or  
by hand

Description:

Body:

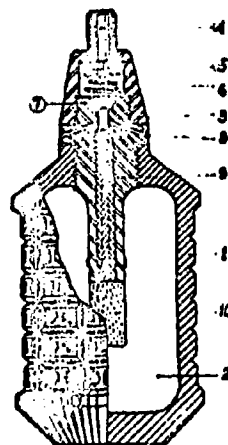
- (1) cylindrical body made of cast iron with serrations for fragmentation effect

Charge:

- (2) either an explosive or black powder

Detonation: time fuze on the headpiece, which consists of:

- (3) light-alloy body
- (4) striker
- (5) safety pin with two arms
- (6) safety spring
- (7) primer
- (8) vents
- (9) delay device consisting of a slow-burning fuze
- (10) detonator



Propelling charge: independent of the grenade

Total weight: 0.5 kg (approx.)

Weight of explosive: 80 gr (approx.)

Weight of propelling charge: - -

Diameter: 50 mm

Length: 115 mm

Time delay: 12 seconds

Maximum range: 400 meters

Functioning: Once the safety pin is removed, the projectile operates by inertia upon launch (lowering of the striker). When the grenade is launched by hand, the thrower must first exert pressure on the primer by hitting the striker head.

Observation: This is a Japanese M.91-type grenade.

### 50-MM STICK BOMB

Purpose: Explosive projectile

Launch method: 50-mm bomb launcher

Description:

Body:

- (1) cast-iron body

Pennage:

- (2) 4 sheet-metal fins and a cylindrical brace

Stick:

- (3) made of wood, reinforced at the tip with a metal band (4)

Charge:

- (5) melinite

Detonation:

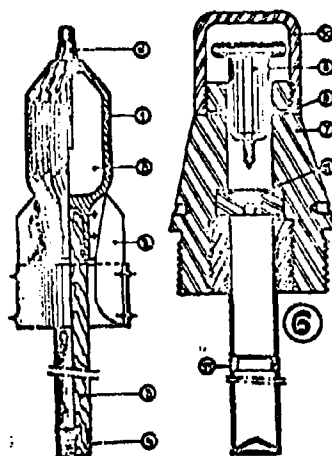
- (6) ogival time fuze, consisting of:
  - (7) light-alloy body
  - (8) striker
  - (9) shear pin
  - (10) light-alloy safety cap
  - (11) primer
  - (12) detonator

Propelling charge: independent of the grenade, consisting of black powder

Total weight: 10 kg

Weight of explosive: about 2 kg of melinite

Weight of propelling charge: about 1 kg of black powder



Length: 0.77 meter

Diameter of the projectile: 124 mm

Diameter of the stick: 50 mm

Range: from 230 to 360 meters, depending upon the angle of fire

Functioning: Once the safety cap is removed before firing, upon impact the projectile operates by ramming. The striker shears the shear pin and strikes the primer.

Observation: This is an explosive projectile used for destroying posts.

### 50-MM STICK BOMB

Purpose: Explosive projectile

Launch method: 50-mm bomb launcher

Description:

Body:

- (1) hemispherical ogival cast-iron body

Dispennage:

- (2) 4 sheet-metal vanes supported by  
4 braces

Stick:

- (3) made of wood reinforced at the  
tip with a metal band (4)

Charge: melinite

Detonation:

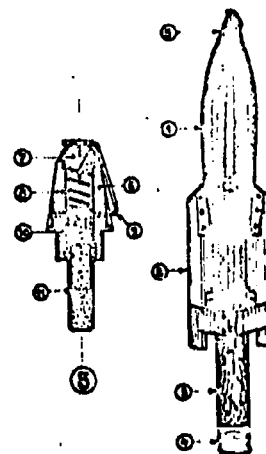
- (5) ogival time fuze, consisting of:
  - (6) light-alloy body
  - (7) fixed striker
  - (8) bounding spring
  - (9) safety pin
  - (10) sliding cap chamber
  - (11) detonator

Propelling charge: independent of the bomb and made up of black powder

Total weight: 9.3 kg

Weight of explosive: 1.35 kg of melinite

Weight of the propelling charge: about 1 kg of black powder



Length: 0.2 meter (approx.)

Diameter of the projectile: 92 mm

Diameter of the stick: 50 mm

Range: from 230 to 300 meters, depending upon the angle of fire.

Functioning: Once the safety pin is removed before firing, upon impact the projectile operates by inertia. The sliding cap chamber compresses the bounding spring and the primer hits the striker.

Observation: Explosive projectile used for the destruction of posts.

Note: The projectile and the caponage are painted a red-brick color. Markings to indicate shipment and grading are painted in white on the projectile, very similar to the markings on French weapons.



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